6/30/2010

ENGLISH FOR MATH

MIPA

PROGRAM STUDI MATEMATIKA

BOOK TWO | HAFIZ

PENGANTAR

Tuntutan penggunaan bahasa Inggris dalam dunia pendidikan saat ini sudah tidak dapat dihindarkan lagi; Dengan maraknya Sekolah Bertaraf Internasional (SBI) yang menggunakan bahasa Inggris sebagai bahasa pengantar dalam proses belajar. Referensi-referensi ilmu pengetahuan selalu menggunakan bahasa Inggris. Lapangan pekerjaan dan bidang pendidikan membutuhkan mereka yang mampu bersaing; tidak hanya memiliki kecerdasan matematis akan tetapi kecerdasan lain terutama kecerdasan linguish.

Dengan demikian, STKIP HAMZANWADI Pancor-Selong memberikan mata kuliah bahasa Inggris yang relevan (English for Math) agar mahasiswa dapat memahami konsep dan operasional Matematika berbahasa Inggris; dapat menjelaskan dan menguraikan kembali berbagai topic dalam bidang ilmu Matematika dengan bahasa Inggris baik secara lisan dan tertulis kepada orang lain; serta dapat mengaplikasikan berbagai konsep dan operasional Matematika dalam menyelesaikan soal-soal Matematika yang berbahasa Inggris; sesuai dengan kaidah-kaidah bahasa Inggris lisan dan tertulis.

Penulis,
Abdul Hafiz Efendi Wijaya

DAFTAR ISI

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

UNIT ONE

NUMBERS

The Role of Spelling

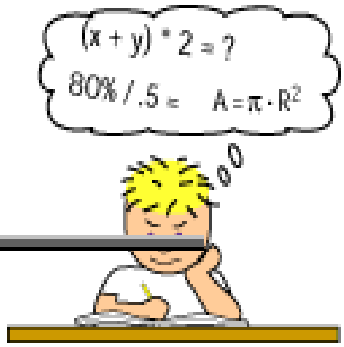
1. **i before e, except after c. . . .**
   Achieve, believe, bier, brief, hygiene, grief, thief, friend, grieve, chief, fiend, patience, pierce, priest ceiling, conceive, deceive, perceive, receipt, receive, deceit, conceit
   a. **In words that rhyme with hay**
      Neighbor, freight, beige, sleigh, weight, vein, and weigh
   b. **Some other exceptions**
      Either, neither, feint, foreign, forfeit, height, leisure, weird, seize

2. **A final y changes to i when an ending is added**
   supply becomes supplies
   worry becomes worried
   merry becomes merrier
   a. **Except when the ending is "ing"**
      crying, studying
   b. **"y" is preceded by a vowel**
      obeyed, saying

3. **English Numbers**

1	2	3	4
one	two	three	four
5	6	7	8
five	six	seven	eight
9	10	11	12
nine	ten	eleven	twelve

13 thirteen	14 fourteen	15 fifteen	16 sixteen
17 seventeen	18 eighteen	19 nineteen	20 twenty
21 twenty-one	22 twenty-two	23 twenty-three	24 twenty-four
25 twenty-five	26 twenty-six	27 twenty-seven	28 twenty-eight
29 twenty-nine	30 thirty	40 forty	50 fifty
60 sixty	70 seventy	80 eighty	90 ninety
100 one hundred	½ half	¼ quarter	¾ three quarter



Reading

1. Comprehending a Text

Bacalah dan terjemahkan teks bacaan di bawah ini, temukan kata-kata yang sulit dan penting menurut anda kemudian jawablah pertanyaan - pertanyaan

PLACE VALUE

Our number system is based upon powers of 10. That is, the value of a digit (numeral) depends upon its location in the number. Consider a given digit location (its place in the number, not the value of the numeral itself). The digit location to its immediate left

is worth ten times as much as the given digit location. The digit place to the immediate right is worth one-tenth as much. This is called place value.

For example, in the number 456, the "5" tells how many tens (place value is "10"), the "4" tells how many hundreds (place value is 100, which is 10 x 10) and the 6 tells how many ones (place value is 1, which is 1/10 x 10). This is sometimes called "the base 10 numbering system. The numeral to the far right tells how many ones (1), the numeral to its left tells how many tens (10 x 1), the next numeral to the left tells how many hundreds (10 x 10), the next numeral tells how many thousands (10 x 100), and so on with the place value increasing by a factor of ten each time.

VOCABULARIES

Consider	consider kkt. 1 mempertimbangkan. 2 menganggap. 3 memikirkan, mengingat. - considered ks. betul-betul dipertimbangkan. - considering kd. mengingat.
Immediate	immediate ks. 1 dengan segera. 2 dekat. - immediately kk. dengan segera, sekarang juga, dengan tidak melewatkan waktu, dengan serta merta. i. ofter segera sesudah.
Worth	worth kb. harga. -ks. 1 bernilai, cukup baik, bermanfaat. 2 berharga. 3 seimbang.
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

QUESTIONS 1

1. What is the power of our system numbers?
   .....
   .....
2. What is digit location in a number?
   .....
   .....
3. What is the worth of the left digit location?
   .....
   .....
4. What is the worth of the right digit location?
   .....
   .....
5. What is the place value?
   .....
   .....
6. In the number 789.01. What is the "9" place value?
   .....
   .....
7. Are quarter and half belonging to number?
   .....
   .....
8. Angaka 9.999.999.999 masing-masing memiliki *place value*. Isilah titik-titik di dalam kotak di bawah ini dengan nama valuenya!

9	9	9	9	9	9	9	9	9	9

Math Focus

1. Terms and Symbols of Multiplication

a. Factor

A **factor** is a number that is multiplied. A **product** is the result of multiplication.
7 x 8 = 56.
7 and 8 are *factors.* 56 is the *product*.
Rpresent multiplication in the following ways:
A multiplication sign or a dot between factors indicates multiplication:
7 x 8 = 56
7 • 8 _ 56
Parentheses indicate multiplication:
(7)8 = 56
7(8) = 56
(7)(8) = 56
Multiplication indicated when a number is placed next to a variable: 7*a* = 7 x *a*

b. Variable

A **variable** is a letter that represents an unknown number. Variables are used in equations, formulas, and mathematical rules.

c. Coeficient

A number placed next to a variable is the **coefficient** of the variable:
9d **9** is the coefficient to the variable ***d***.

2. Properties of Addition and Multiplication

a. Commutative Property of Addition.

When using addition, the order of the addends does not affect the sum: *a* + *b* = *b* + *a*

b. Commutative Property of Multiplication.
When using multiplication, the order of the factors does not affect the product:
$a \times b = b \times a$

c. Associative Property of Addition.
When adding three or more addends, the grouping of the addends does not affect the sum. $a + (b + c) = (a + b) + c$.

d. Associative Property of Multiplication.
When multiplying three or more factors, the grouping of the factors does not affect the product. $5(ab) = (5a)b$

e. Distributive Property.
When multiplying a sum (or a difference) by a third number, you can multiply each of the first two numbers by the third number and then add (or subtract) the products.
$7(a + b) = 7a + 7b$
$9(a - b) = 9a - 9b$

3. Order of Operations

Anda harus mengikuti urutan-urutan operasi Matematika berikut ini; **PEMDAS**
Parentheses: First, operations within parentheses.
Exponents: Next evaluate exponents.
Multiply/**D**ivide: Then work from left to right in your multiplication and division.
Add/**S**ubtract: Last, work from left to right in your addition and subtraction. *Example*

$8 + 4 \times (3 + 1)^2$	**P**arentheses
$8 + 4 \times (4)^2$	
$8 + 4 \times 16$	**E**xponents
$8 + 64$	**M**ultiplication (and **D**ivision)
72	**A**ddition (and **S**ubtraction)

GRAMMAR

1. Noun

a. Common Nouns

People, places dan *things* termasuk common nouns.

These common nouns are words for things.

Ruler, chair, hammer, bicycle, truth, Pen, table, saw, ship, calculator, crayons, sofa, axe, truck, television, pencil, loyalty,

These common nouns are words for animals and young animals.

Dog	puppy	fox	cub	Goat	kid
Cat	kitten	elephant	calf	Frog	tadpole
Cow	calf	kangaroo	Joey	tiger	cub
Horse	foal	bear	cub	whale	calf
Sheep	lamb	lion	cub		

These common nouns are words for places.

bank	airport	school	post office
hotel	gas station	university	police office
library	park	station	restaurant
museum	farm	mosque	supermarket
mall	zoo	temple	stadium
theater	factory	shop	synagogue
hospital	nursery	gym	church

These common nouns are words for people who do certain things.

Singer, manager, sailor, gardener, dancer, secretary, pilot, police, officer, artist, teacher, driver, plumber, photographer.

b. Proper Nouns

Nama-nama tertentu; *people, places*, dan *things* adalah proper nouns dan selalu diawali huruf capital.

These people's names are proper nouns.

Robin Hood, Florence, Nightingale, Mom, Miss, Park, Aladdin, Muhammad Ali, Dad, Mrs. Taylor, Frankenstein, George,

The names of the days of the week and the months of the year are proper nouns.

Monday	January	July
Tuesday	February	August

The names of special days and celebrations are also proper nouns.

Independence Day	Hultah NWDI day
Judgement day	Muhammad Birhday
Ramadan	Lebaran day

The names of famous places, buildings and monuments are proper nouns.

The Birrul Walidain
The Al-Abrar
The Islamic Centre
The New Building of STKIP HAMZANWADI

The names of people who live in a particular country are also proper nouns.

Country	People
Lombok	Sasakist
Java	Javanist
Afghanistan	Afghans
Australia	Australians
Britain	The British
China	The Chinese
France	The French
Germany	Germans
Pakistan	Pakistanis
Philippines	Filipinos
Russia	Russians
Nicaragua	Nicaraguans
South Africa	South Africans
India	Indians
Indonesia	Indonesians
Italy	Italians
Japan	Japanese
Korea	Koreans
Malaysia	Malaysians
Samoa	Samoans
New Zealand	New Zealanders
Spain	Spaniards
Switzerland	The Swiss
Thailand	Thais
USA	Americans
Vietnam	Vietnamese

Exercise 1

Underline the common nouns and **circle** the proper nouns in these sentences.

1. I told Uncle Ahmad about my accident.

2. Siti and Minah wore black cover.
3. The computer is broken.
4. We're going to the town park tomorrow.
5. The lion is playing with one of its cubs.
6. My sister's favorite soccer player is David Beckham.
7. I'm watching a videotape about the Sahara Desert.
8. The tourists visited Senggigi and saw the sun set.
9. Does this bus go to the Mataram?
10. We're reading a story about a boy called Harry Potter.

Exercise 2

Read and underline the common nouns and circle the proper nouns.

Mr. Udin lives in Jorong in a big house by the Musholla. He has a classic motorcycle. He likes to travel to different countries. Last Lebaran, he went to Rinjani montain and saw the Segara Anak lake. He enjoyed eating fish every dinner.

2. **PRONOUN**

Pronoun atau kata ganti adalah kata yang mengganti atau menempati posisi kata benda.

Terdapat beberapa kata ganti seperti dibawah ini;

a. Personal Pronouns

Personal pronouns dapat digunakan sebagai **subject** kata kerja atau **object** kata kerja.

b. Subject Pronouns

Subject kata kerja (dengan kata kerja penuh /action). Personal pronouns **I, you, he, she, it, we,** dan **they** dapat digunakan sebagai subject. Pelajari kalimat di bawah ini:

- Lisa likes guitar.
- **She** has a guitar.

Pada kalimat pertama, proper noun **Lisa** adalah subject kata kerja *likes*. Sedangkan pada kalimat kedua, pronoun **she** adalah subject kata kerja has.

Berikut ini beberapa kalimat yang menunjukkan personal pronouns yang digunakan sebagai **subjects kata kerja**.

1. My name is Jamilah. **I** am fourteen.
2. My father works hard. **He** works in a factory.
3. My sister is older than me. **She** is twelve.
4. Our goose is very naughty. **It** likes to chase children.
5. Dani and I are playing football. **We** like sports.
6. Jaka and Jono are my brothers. **They** are older than I am.

c. Object Pronouns

The object of a verb receives the action of the verb. Personal pronouns; **me, you, him, her, it,**

us dan **them** dapat digunakan sebagai object kata kerja. Perhatikan kalimat berikut ini:

Lisa likes **geese**. She likes to stroke **them**.

Pada kalimat pertama, **geese** adalah object dari verb *likes*. Pada kalimat kedua, pronoun **them** adalah object dari verb stroke.

Di bawah ini beberapa kalimat yang menunjukkan bagaimana personal pronouns yang digunakan sebagai objects of verbs.

1. **I** am doing my homework. Dad is helping **me**.
2. Goodbye, **children**! I will call **you** later.
3. Where is **Udin**? I need to speak to **him**.
4. **Miss Sri** is very nice. All the children like **her**.
5. **The plate** is very dirty. Mom is cleaning **it**.
6. Uncle Jono called **Minah** to ask **her** a question.
7. **My chocolates** are all gone. Someone has eaten **them**.

First, Second, and Third Person

Dalam grammar, orang yang berbicara disebut first person, lawan bicara adalah second person, dan orang yang dibicarakan adalah third person. Di bawah ini adalah tabel yang dapat membantu penggunaan pronouns.

	subject	object
first person singular	I	me
second person singular	you	you

third person singular	he	him
	she	her
	it	it
first person plural	we	us
second person plural	you	you
third person plural	them	they

d. Reflexive Pronouns

Reflexive pronouns adalah kata-kata yang menunjukkan **noun** atau **pronoun** yang merupakan subject dari kata kerja. Kata-kata; *myself, yourself, himself, herself, itself, ourselves, yourselves, dan themselves* adalah reflexive pronouns.

1. My brother built this computer **himself**.
2. Be careful not to cut **yourself** with that knife.
3. Dedi was looking at **himself** in the mirror.
4. Udin fell and hurt **herself**.
5. Our cat washes **itself** after every meal.
6. We baked the cake by **ourselves**.
7. Come in, everybody, and find **yourselves** a seat.
8. The children cleaned their room all by **themselves**.
9. Bears like to rub **themselves** against a tree.
10. The bird washed **itself** by splashing in a puddle.
11. The players train every day to keep **themselves** fit.
12. Have **yourselves** a good time.

Berikut ini adalah tabel reflexive pronoun yang digunakan untuk personal pronoun.

Singular personal pronoun	**Reflexive pronoun**	**Plural personal pronoun**	**Reflexive pronoun**
I (subject pronoun)	myself	we (subject pronoun)	ourselves
me (object pronoun)	myself	us(object pronoun)	ourselves
you (subject/ object pronoun)	yourself	you (subject/ object pronoun)	yourselves
he (subject pronoun)	himself	they (subject pronoun)	themselves
him (object pronoun)	himself	them (object pronoun)	themselves
she (subject pronoun)	herself		
her (object pronoun)	herself		
It	itself		

e. Possessive Pronouns

Possessive pronouns digunakan untuk membicarakan milik. Kata; mine, yours, his, hers, ours, dan theirs adalah possessive pronouns.

1. This book is **mine**.
2. Have you lost **yours**, Tom?
3. This pen is **mine** and that one is **his**.
4. Sarah has lost her cat. Is this cat **hers**?
5. I can see our car, but where is **yours**?
6. We've had our lunch, but they haven't had **theirs**.

Berikut ini adalah tabel possessive pronoun untuk personal pronoun.

singular personal pronoun	possessive pronoun	plural personal pronoun	possessive pronoun
I, me	mine	we, us	ours
You	yours	you	yours
he, him	his	They, them	theirs
she, her	hers		

f. Demonstrative Pronouns

Demonstrative pronouns digunakan untuk menjelaskan sesuatu. Kata; this, that, these, dan those are demonstrative pronouns.

1. **This** is my desk.
2. **This** is Minah's house.
3. **That** is my friend's house.
4. **That**'s my mother's car.
5. You'll have to work harder than **this**.
6. We can do better than **that**.
7. It's raining again. **This** is awful!
8. Who is **that** knocking at the door?
9. Hi, Kathleen. **This** is Michael.
10. **These** are my pets.
11. **These** are sheep but **those** are goats.
12. **Those** are horses.

Note

1. Use this and these when you are talking about things near you.
2. Use that and those when you are talking about things farther away.

g. Interrogative Pronouns

Interrogative pronouns are used to ask questions. The words **who, whose, what, which and whom** are interrogative pronouns.

1. Who used all my paper?
2. Who is Mom talking to?
3. Who are those people?
4. Whose pen is this?
5. Whose are these shoes?
6. What is your brother's name?
7. What does Tom want?
8. What is the date today?
9. What do you want to be when you grow up?
10. Which of these desks is yours?
11. Which do you prefer?
12. Which of your sisters is the tallest?
13. Whom did the President criticize?

Note

1) Ketika dalam tulisan dan speaking formal, anda dapat menggunakan **whom** as the object of verbs and prepositions. For example:
   Whom did the lecturer criticize?
   Whom is the principal talking to? **or**
   To whom is the principal talking?
2) But you cannot use whom as the subject of a verb. So you cannot say:
   ✘ Whom came to the party last night?

You have to say:
✔ Who came to the party last night?

3) Who can be used as the subject or the object of a verb. For example:
Who broke the window? (as the subject)
Who are you inviting to your party? (as the object)

4) Who can be used as the object of a preposition. For example:
Who is Mom talking to?

5) You can also use whom as the object of a preposition. For example:
Whom is Mom talking to?

6) If you put the preposition before the interrogative pronoun, you must use whom, Forexample;
To whom is Mom talking?

h. Indefinite Pronouns

An indefinite pronoun does not refer directly to any other word. Most indefinite pronouns express the idea of quantity.

1. Everybody is welcome at the meeting.
2. Many prefer their coffee with sugar.
3. Does anybody care for a earthquake victim?
4. Few choose to live in the desert.

Other Indefinite Pronouns

All	each	Most	other
another	either	Neither	several
any	everybody	nobody	some
anybody	everyone	None	somebody
anyone	few	no one	someone
both	many	One	such

The pronoun *they* is considered an indefinite pronoun when it makes an indefinite reference.

1. They produce a lot of rice in your state.
2. Why don't they repair the bad roads?

Exercisse 3

Tulislah subject atau object pronouns pada bagian kalimat yang kosong.

My name is Riki. ……. have two brothers. ……. are both older than …….. Sometimes they take me to the park and ……. play football together. I like playing football with ……. because they are very good. We are going to the park today. Would you like to come with ……..? ……. can all play together. Afterwards, ……. can come to my house if ……. want to. I think …….. will like my mother. She is very funny and ……. makes delicious pelecing. Do ……. like pelecing kangkung?

Exercise 4

Beberapa reflexive pronouns di bawah ini sengaja dibuat salah dan benar. Tandai dengan tanda rumput (√) jika benar dan tandai dengan (x) jika salah. Kemudian tulislah reflexive pronoun yang benar di tempat kosong.

1. Sometimes he washes the dishes all by himself.

   …….

2. Dad had an accident. He cut herself with a knife.

   …….

3. Sally washes the car by herself.

   …….

4. Do you think the doctor can cure itself when he is ill?

   …….

5. The cat stays clean by licking itself.

   …….

6. Anna and May made the dinner all by herself.

   …….

7. Mom lets me walk to school by myself.

   …….

8. Can you dress yourselves, boys and girls?

   …….

9. David can swim all by himself now.

   …….

10. This light is automatic. It switches itself on at night.

    …….

Exercise 4

Read the following passage. Write the missing demonstrative pronouns in the blank spaces.

Henry and I went for a walk on the beach. "What's …… over there?" I asked. "It looks like broken glass," said Henry. He gave me a bag. "Put it in ……..," he said. I put the broken glass into the bag. "We'd better put ……. in the trash," I said. He took the bag from me. "You have to hold it like ……," said Henry, "so that you don't cut your hand."

Exercise 5

Write the missing possessive pronouns in the blank spaces to complete the sentences.

1. I chose this seat first so it's …….
2. Can we borrow your coloring pens? We've lost …….
3. We live in the city and they live in the countryside. Our house is smaller than …….
4. Is this a pencil ……?
5. Sally is looking for her gloves. Are these gloves …….?
6. Can Julie use your bike? …….is broken.
7. Tom got the books mixed up. He thought mine was …….and his was …….

SPEAKING

1. Identifying Objects

What's **that**?	Apa itu?
That's a book.	Itu sebuah buku
Is **this** your book?	Apakah ini bukumu?
No, **that's** not my book.	Bukan, itu bukan buku saya
Whose book is **this**?	Milik siapa buku ini?
That's **your** book.	Itu bukumu
And what's that?	Dan apa itu?
Is **that** a book?	Apakah itu sebuah buku?
No, **it** isn't.	Bukan, itu bukan sebuah buku
It's a pencil.	Itu adalah sebuah pensil
Is it yours?	Apakah itu milikmu?
Yes, it's **mine**.	Ya, itu milik saya
Where's the door.	Dimana pintunya?
There **it** is.	Itu disana
Is this book **his**?	Apakah buku ini miliknya?

2. Talking About Number and Operation

Duta : Hi Din. Today is Speaking. What is the topic?

Derry : Our topic is number and its operation

Duta : By the way, we know the real numbers; those are whole numbers, integers, rational numbers, and irrational numbers.

Derry : Would you please to give me some examples?

Duta : Ok. **Whole numbers** are also known as counting numbers. 0, 1, 2, 3, 4, 5, 6, . . .
Integers are positive and negative whole numbers and the number zero. . . . –3, –2, –1, 0, 1, 2, 3 . . .
Rational numbers are all numbers that can be written as fractions, terminating decimals, and repeating decimals. Rational numbers include integers. ¾, ½, 0.25, 0.38658, 0.666
Irrational numbers are numbers that cannot

be expressed as terminating or repeating decimals. $\pi, \sqrt{2}$, 1.6066951524.

Derry : Concerning with numbers, we have to know math symbol. The most common math symbols are;

- = is equal to
- ≠ is not equal to
- > is greater than
- ≥ is greater than or equal to
- < is less than
- ≤ is less than or equal to

Duta : That is right! But also, we have to know some terms, symbols, properties of multiplication and addition, and the order of math operation.

WRITING

1. Writing Simple Sentence

a. Parts of Simple Sentence

6	1	2	3	4	5	6
When	S	V	O	How	Where	When
	I	counted	The money			
	I	counted	The money	quickly		
	I	counted	The money	quickly	In my room	
	I	counted	The money	quickly	In my room	yesterday

Those part of sentences arise from these questions

What or who are you thinking	.....

about?	
What is he/she doing?	.....
What is he/she .....?	.....
How does he/she .....?	.....
Where does he/she .....?	.....
When does he/she .....?	.....

b. Nominal Sentence

Kalimat tanpa kata kerja menggunakan auxiliary verbs seperti ; *are; am, is, are, was, were,* and *be*. Example

Indonesian	Lateral translate	True translate
Udin sakit	Udin sick	Udin is sick
Sekolah ku di sana	My school there	My school is there
Adikku tinggi	My little brother tall	My little brother is tall
Mereka di sini	They here	They are here

c. Verbal Sentence (has a verb)

The verb change dependent on the tenses. Examples

Nenek tidur pada siang hari	Grandma sleeps during the day
Orang itu lari pontang-panting	That man runs wildly
Saya makan banyak	I eat a lot

d. Auxiliary Verbs

Helping Verbs	
Primary	Modal

do	(to make simple tenses, and questions and negatives)	can	could
be	(to make continuous tenses, and the passive voice)	may	might
have	(to make perfect tenses)	will	would
		shall	should
		must	ought (to)
"Do", "be" and "have" as helping verbs have exactly the same forms as when they are main verbs **(except that as helping verbs they are never used in infinitive forms).**		Modal helping verbs are invariable. They always have the same form.	
Primary helping verbs are followed by the main verb in a particular form: **do + V1 (base verb)** **be + -ing (present participle)** **have + V3 (past participle)**		"Ought" is followed by the main verb in infinitive form. Other modal helping verbs are followed by the main verb in its base form (V1). ought + to... (infinitive) other modals + V1 (base verb)	
"Do", "be" and "have" can also function as main verbs.		Modal helping verbs cannot function as main verbs.	

2. Real Number Problems

1) The number –16 belongs in which of the following sets of numbers?
   a. rational numbers only
   b. whole numbers and integers
   c. whole numbers, integers, and rational numbers
   d. integers and rational numbers
   e. integers only

Answer
d –16 is an integer because it is a negative whole number. It is also a rational number because it can be written as a fraction. All integers are also rational numbers. It is not a whole number because negative numbers are not whole numbers

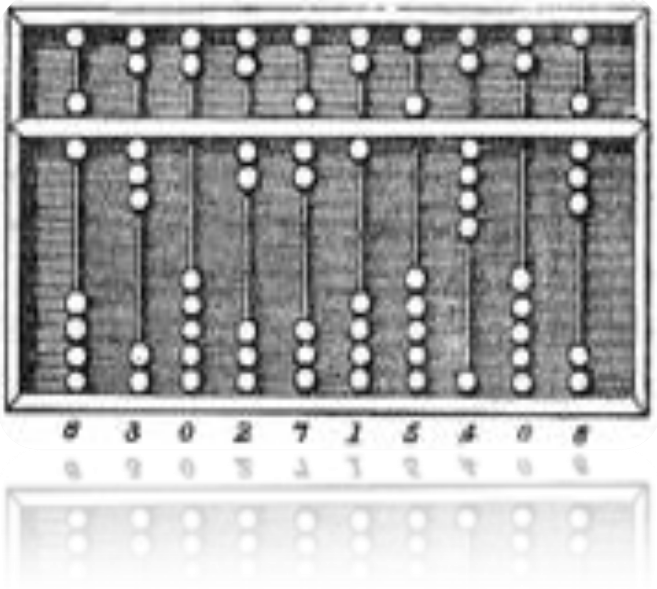
2) If $a > 37$, which of the following is a possible value of a?
   a. –43
   b. –37
   c. 35
   d. 37
   e. 41

   Answer
   e. $a > 37$ means that a is greater than 37. Only 41 is greater than 37.

Exercise 6

Buatlah kalimat dengan mengisi kolom!

6	1	2	3	4	5	6
When	S	V	O	How	Where	When



UNIT TWO

SQUARE and SQUARE ROOT

The Role of Spelling

1. A silent e is dropped when adding an ending that begins with a vowel . . .
   advance + *-ing*= advancing
   surprise + *-ing*= surprising

2. But kept when the ending begins with a consonant
   advancement, likeness

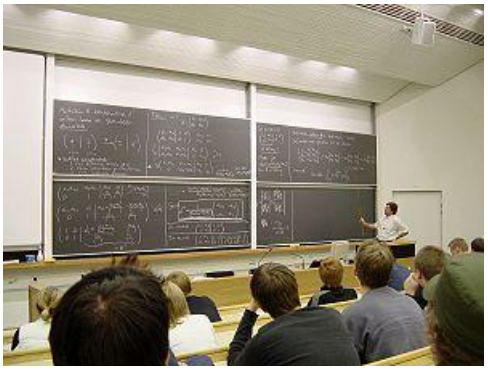
3. Unless the e is preceded by a vowel
   argue + *-ment*= argument
   true +*-ly*= truly

4. Adding a prefix seldom changes the spelling of a word.
   misspelled
   unnecessary
   dissatisfied
   disinterested
   misinform

READING

1. **Comprehending a Text**
   Bacalah dan terjemahkan teks bacaan di bawah ini, temukan kata-kata yang sulit dan penting menurut anda kemudian jawablah pertanyaan – pertanyaan.

Squares and Square Roots



Some math problems will ask you to calculate a square or a square root of a number. This lesson will explain what squares and square roots are and show you how to calculate them. When you think of a square, you probably think of a box shaped figure with four equal sides. As you'll see in this lesson, that's a good way to think about squares *and* square roots.

A *square* of a number is just the number multiplied by itself. So the square of 4 is 4 × 4 = 16. How does this relate to a square-shaped figure? The area of a square is the amount of space a square takes up. To calculate the area of a square, you multiply the length of one side by itself. That is why the area of a square is sometimes written as *s* squared, or s^2. Any time a number is written with a2 raised after it, it means to multiply the number by itself, or to *square* the number.

To find a square root of a number you have to think backwards. You will be given the area of an entire square. The answer to the problem, or *square root*, is the length of only one side of the square. That is, the square root of a number is a number that when multiplied by itself equals the number given in the problem. You may have seen this symbol before: $\sqrt{\ }$. This is the symbol for a square root. When it is written over a number, you are being asked to find the square root of that number.

Your Vocabularies

Square	**square** **kb**. 1 kwadrat, (empat) persegi. 2 **Sl**.: seorang yang konvensionil, orang yang ketinggalan zaman mengenai mode. 3 (village) alun-alun. 4 hasil perkalian. 5 lapangan persegi.
root	**root** **kb**. 1 akar (of aplant, tooth). 2 sumber. 3 asal kata, kata dasar (of a word). 4 akar pangkat. -**rooted** **ks**. berakar. deeply **r**. berurat-berakar.
calculate	**calculate** **kkt**. menghitung. -**kki**. memperhitungkan.-**calculated** **ks**. yg sdh diperhitungkan.-**calculating** **ks**. yg memperhitungkan semua.
Shaped	**shape** **kb**. 1 bentuk. 2 potongan (of clothes, jewelry). 3 keadaan, kondisi. -**kkt**. 1 membentuk (**s**.t.). 2 menentukan (o's future). -**kki**. memperoleh bentuk tertentu.
Figure	
equal sides	
Multiplied	
Amount	
Space	
Length	
Backwards	
Entire	
Tricky	
Even	
Though	

Exercise 7

Do you understand what square and square root are? Express here!

1. What is a box shaped figure with four equal sides?
   ……
   ……
   ……
2. What is square?
   ……
   ……
   ……
3. What is square root?
   ……
   ……
   ……
4. How does square relate to a square-shaped figure?
   ……
   ……
   ……
5. What is the area of a square?
   ……
   ……
   ……
6. How do you calculate the area of a square?
   ……
   ……
   ……
7. How do you find a square root of a number?
   ……
   ……
   ……

Math Focus

1. Square Symbol

The symbol for square root is $\sqrt{\ }$. This symbol is called the **radical**. The number inside of the radical is called the **radicand**.

$\sqrt{36}$ = 6 because $6^2 = 36$

36 is the square of 6, so
6 is the square root of 36

2. Perfect Squares.

The square root of a number might not be a whole number. For example, there is not a whole number that can be multiplied by itself to equal 8, because $\sqrt{8}$ = 2.8284271 . . . .

1 is a perfect square because $\sqrt{1} = 1$
4 is a perfect square because $\sqrt{4} = 2$
9 is a perfect square because $\sqrt{9} = 3$

3. Negative Exponents

Negative exponents are the opposite of positive exponents. Therefore, because positive exponents tell you how many of the base to *multiply* together. Negative exponents tell you how many of the base to *divide*.

$a^{-n} = \frac{1}{a^n}$

$3^{-2} = \frac{1}{3^2} = \frac{1}{3 \times 3} = \frac{1}{9}$

4. Rational Exponents

Rational numbers are numbers that can be written as fractions (and decimals and repeating

decimals). Similarly, numbers raised to rational exponents are numbers raised to fractional powers: $4^{1/2}$, $25^{1/2}$, $8^{1/2}$
For a number with a fractional exponent, **the numerator** of the exponent tells you the power to raise the number to, and the denominator of the exponent tells you the root you take.

$4^{1/2} = \sqrt{4^1} = \sqrt{4} = 2$. The numerator is 1, so raise 4 to a power of 1. The denominator is 2, so take the square root.
$8^{1/3} = \sqrt[3]{8^1} = \sqrt[3]{8} = 2$ The numerator is 1, so raise 8 to a power of 1. The denominator is 3, so take the cube root.

5. Odd and Even Numbers

An **even** number is a number that can be divided by the number 2 to result in a whole number. Even numbers have a 2, 4, 6, 8, or 0 in the ones place.
2 34 86 1,018 6,987,120

Consecutive even numbers differ by two:
2, 4, 6, 8, 10, 12, 14 . . .
An **odd** number cannot be divided evenly by the number 2 to result in a whole number. Odd numbers have a 1, 3, 5, 7, or 9 in the ones place.
1, 13, 95, 2.827, 7.820.289

Consecutive odd numbers differ by two:
1, 3, 5, 7, 9, 11, 13 . . .
Even and odd numbers behave consistently when added or multiplied:

even + even = even	and	even x even = even
odd + odd = even	and	odd x odd = odd
odd + even = odd	and	even x odd = even

6. Factors

Factors of a number are whole numbers that, when divided into the original number, result in a quotient that is a whole number. Example;
The factors of 18 are 1, 2, 3, 6, 9, and 18 because these are the only whole numbers that divide evenly into 18.

The **common factors** of two or more numbers are the factors that the numbers have in common.
The **greatest common factor** of two or more numbers is the largest of all the common factors. Determining the greatest common factor is useful for reducing fractions. Examples
The *factors* of 28 are 1, 2, 4, 7, 14, and 28.
The *factors* of 21 are 1, 3, 7, and 21.

The *common factors* of 28 and 21 are therefore 1 and 7 because they are factors of both 28 and 21. The *greatest common factor* of 28 and 21 is therefore 7. It is the largest factor shared by 28 and 21.

GRAMMAR

1. Articles

The words "a, an, and the" are called the articles. The words "a and an" are indefinite articles. They are used with singular nouns. Use a before nouns that begin with a consonant. Use an before nouns that begin with a vowel.

- John is reading a book.

- Would you like a peach?
- Is that a dog or a fox?
- You'll need a ruler and a pencil.
- Is there also an entrance at the back of the building?
- Have you ever seen an elephant?
- I always take an apple to school.
- Do you have an umbrella that I can borrow?
- Would you like to live on an island?

NOTE

1) Some vowels have a consonant sound as well as vowel sound. Use the article **a** with nouns that begin with these vowels:

   - Is there a university in your town?
   - Does every child in the school wear a uniform?
   - We are taking a European vacation this summer.

2) Some words begin with a silent h. Use **an** with nouns that begin with a silent h:

   - We've been waiting here for an hour.
   - Meeting the president was an honor for all of us.

3) The word "the" is called the *definite article*. Use **the** before a noun when you are talking to someone who already knows which person or thing you mean.

   - Dad is sitting in the garden.
   - Who made the mess on the carpet?

- Turn the television off now.
- I'll wait for you in the car.
- The boys are upstairs and the girls are outside in the street.

2. Using Nouns without Articles

a. When you are talking about something in general, not a particular thing, use a noun without an article. You can also use plural nouns without an article.

- **Frogs** are my favorite animals.
- **Children** like playing games.
- **Babies** cry a lot.
- **Glasses** are things that you wear to correct your eyesight.
- **Birds** are animals that can fly.
- **People** enjoy watching television.

b. Nouns that don't show quantity are normally used without a or an. The article the, however, may be used with nouns that don't show quantity.

- I like **sunshine**.
- I sometimes have **fruit** for breakfast.
- You've got **dirt** on your face.
- A clock measures **time**.
- Put **sugar** in your tea to make it sweet.
- I need **time** to think of a new plan.
- Would you pass me **the salt**, please!
- Can I borrow **the paint** when you've finished?

3. **Determiners**

Determiners, or noun signals, are special adjectives used before nouns. There are different kinds of determiners.

a. Demonstrative Determiners

The words **this, that, these** and **those** are also special pronouns called determiners. They are used to point out which thing or person you mean. They are called demonstrative determiners.

Use **this** and **these** to talk about things and people that are near you.

Use this with singular nouns.
Who lives in this house?
This car belongs to my mom.
Does this key fit the lock?
This book is my favorite.
Who gave you this money?
This cheese tastes fun

Use these with plural nouns
These trousers are too short.
I don't like these comics.
These biscuits don't taste very good.
I bought these apples for lunch.
Is there an adult with these children?

Use **that** and **those** to talk about things that are farther away from you.

Use that with singular nouns
This chair is mine and that chair is yours.
That animal is making a funny noise.
Would you pass me that book, please?
Who is that man talking to Dad?
How much is that dress?

Use those with plural nouns
I gave my sandwiches to those boys.
Those children go to a different school.
These shoes are mine and those shoes are yours.
These apples look fresh but those apples look rotten.
Those people are from Africa.

b. Quantifying Determiners

Words such as many, **much** and **several** tell about quantity without giving an exact number. They are called *quantifying determiners*. Some quantifying determiners are used only with plural nouns. They are **few, a few, fewer, many, several** and **both**.

- Few people have been to the moon.
- We went to Europe many years ago.
- A few children are absent today.
- Several friends went with me.
- I have fewer CDs than you.
- Both brothers have dark hair.

Some quantifying determiners can be used with plural nouns and nouns that show no exact number. They are **all, half, some,**

enough, a lot of, lots of, more, most, other and **plenty of**.

- All children seem to like chocolate.
- We've eaten all the food in the refrigerator.
- Half the balloons have burst already.
- Jenny spends half her time watching television.
- Some girls like to play football.
- Can I have some water?
- Do you have enough books to read?
- I don't have enough material to make a dress.
- A lot of people like burgers.
- There's a lot of fruit in the bowl.
- They went to a park with lots of animals in it.
- You will gain weight if you eat lots of ice cream.
- You've got more brothers than I have.
- There's more space in my room than yours.
- Most teachers enjoy teaching.
- Most lemonade contains sugar.
- He likes playing with other children.
- They had never tasted other food.
- Plenty of my friends have seen the Harry Potter movies.
- Drink plenty of water every day.

Some determiners can be used only with nouns of no exact number. They are little (*meaning* not much), a little (*meaning* some), much and less.

- We have little time to play.
- There's a little rice left.

- Does the teacher give you much homework?
- I've got less ice cream than you.

Some quantifying determiners can only be used with singular nouns. They are another, every and each.

- I need another pencil.
- He likes every child in the class.
- Each house is painted a different color.

The quantifying determiners **either** and **neither** refer to two people or things.

- I don't like either drink.
- Neither sister has long hair.

Some quantifying determiners are used with singular, plural, or nouns of no exact quantity. They are any, no, no other and the other.

- Any dog will bite if it's afraid.
- Are there any good books in the library?
- There wasn't any space in the cupboard.
- No child likes getting hurt.
- There were no pencils in the drawer.
- We've done no work today.
- There is no other way of solving the problem.
- She has no other friends.
- We have no other food in the refrigerator.
- Do you like this picture or the other picture?
- The other boys laughed at him.
- I like the other music better.

c. Interrogative Determiners

The words **what, which** and **whose** are used before nouns to ask questions. Interrogative determiners appear just before nouns.

- What time is it?
- Which boy is your brother?
- Whose pen is this?

d. Possessive Determiners

The words **my, your, his, her, its, our** and **their** are used before nouns to show ownership. They are called *possessive determiners*.

- I gave my sandwich to John.
- Is this your desk?
- Alan crashed his bike into a wall.
- Mrs. Park keeps her house very clean.
- The dog was licking its paws.
- There's a snake in our garden.
- Susan and Peter have invited me to their party.

e. Numbers

Numbers are determiners, too. Numbers are often used before nouns to tell you exactly how many people or things there are.

- Our family has **two** dogs.
- There are **twelve** months in the year.
- We bought **three** pizzas.
- My grandfather lived for a **hundred** years.

Exercise 12

Notice the determiners in the following passage. What kind of determiners are they? Put a D in the blank after a demonstrative determiner, a Q after a quantifying determiner, an I after an interrogative determiner, a P after a possessive determiner and an N after a number.

Sally is my ……. friend. We play together every ……. day. I usually go to her …….. house to play. Her …….. parents are very nice, but she has two ……. brothers who sometimes spoil our …….. games. Last week, her …….. brothers pulled my ……. hair. Sally's mom was very angry with them. "Stop behaving in that ……. rough way!" she shouted. I'm glad I don't have any …….. brothers.

SPEAKING

1. Talking About Exponents/Power and Root

Amat	:	**Hi Udin! Do you still remember our teacher's explanation about exponent?**
Udin	:	Absolutely I remember.
Nunung	:	He asked us yesterday but none of students could answer
Udin	:	Well! I'll reveal the definition of exponent. Exponent tells you how many times a number. the base is a

factor in the product.

Nunung : Could you show me an example?

Amat Yes, I could. Three power five. Let's see
$3^5 = 3 \times 3 \times 3 \times 3 \times 3 = 243$
3 is the *base*. 5 is the *exponent*.

Udin : To make clear, Mr. Wibawa also explain about laws of exponents; first; any base to the zero power equals 1, second; when multiplying identical bases, keep the same base and add the exponents.

Nunung : That right. Let's prove to these examples. I will write for you guys.
For the first law;
$(12xy)^0 = 1$
$80^0 = 1$
$8{,}345{,}832^0 = 1$
For the second law;
$b^m \times b^n = b^{m+n}$

Udin : Wow! Great!

2. Talking About Squares and Square Roots

Mamik Adi :	Gus, El! Would you please to explain about this definition; **The square of a number is the product of a number and itself.**
Agus	Yes, I would. Take for example, the number 25 is the **square** of the number 5 because 5 x 5 = 25.
Elly	You have to remember that the square of a number is represented by the number raised to a power of 2, like the following operation;

	$a^2 = a \times a$	$5^2 = 5 \times 5 = \mathbf{25}$
Agus	So, the **square root** of a number is one of the equal factors whose product is the square. For example, 5 is the square root of the number 25 because 5 x5 = 25.	
Mamik Adi	Thank you my buddies!	
Elly	You are welcome! By the way, I have a note about the square concept. I will read for you. Please listen to me!	

WRITING

1. Tenses and Structures of Sentences

a. Basic Tenses

SIMPLE		past	Present	future
singular	I	was	Am	will be
	you	were	Are	will be
	he/she/it	was	Is	will be
plural	we	were	Are	will be
	you	were	Are	will be
	they	were	Are	will be
PERFECT		past	Present	future
singular	I	had been	have been	will have been
	you	had been	have been	will have been
	he/she/it	had been	has been	will have been
plural	we	had been	have been	will have been

	you	had been	have been	will have been
	they	had been	have been	will have been
CONTINUOUS		past	Present	future
singular	I	was being	am being	will be being
	you	were being	are being	will be being
	he/she/it	was being	is being	will be being
plural	we	were being	are being	will be being
	you	were being	are being	will be being
	they	were being	are being	will be being
CONTINUOUS PERFECT		past	Present	future
singular	I	had been being	have been being	will have been being
	you	had been being	have been being	will have been being
	he/she/it	had been being	has been being	will have been being
plural	we	had been being	have been being	will have been being
	you	had been being	have been being	will have been being
	they	had been being	have been being	will have been being

b. Basic Sentence Structures

S-V	He sleeps.
S-V-O	She eats rice.
S-V-O-O	She told him a lie.
S-V-N	He is a doctor.
S-V-Adj	The doctor is sick.
S-V-Adv	The doctor is here.

2. Building Sentences

Remember, the S - V relationship is at the "heart" of every sentence. All sentences are build around this core. To give a sentence more substance, you may enhance the subject or verb:

a. VERB enhancements

Change the verb in the following tense or aspect or a combination of the two.

He eats.	(simple present)
He will eat.	(future/modal)
He is eating.	(continuous)
He has eaten.	(perfect)
He has been eating.	(combination)
He should have been eating.	(combination)

Add an adverb or adverb phrase, or prepositional phrase.

- He should have eaten already/ by now.
- He was eating in the kitchen.

Add an adverbial clause.

- He was eating when the bus arrived.

Add a participial phrase.

- Having finished his homework, he ate.

b. SUBJECT enhancements

Change the noun to a pronoun or vice versa.

- He eats.
  John eats.

Add an article, demonstrative, or possessive.

- The man eats.
  This man eats.
  His father eats.

Note:

1) *Subjects* and *Objects* may be enhanced in similar ways.

Subject	Object
Add an object	
John eats rice.	
The man eats an apple.	
Add an adjective or adjectives	
The handsome man eats	The man eats the big, red apple
Add a prepositional phrase	
The man in the kitchen eats	The man eats an apple from the bowl
Add a relative (adjective) clause	
The man who lives next door eats	The man ate the apple that I bought

Use quantifiers	
Some of the men eat	They eat some of the apples
Use a noun clause	
Whoever gets here first can eat	He eats whichever apple he chooses

2) Enhance both the subject and the verb to make sentences more interesting.
   - The man who lives on the corner is eating his lunch now.
   - The men from the health club eat every day after working out.
   - The tall, green men from Mars are eating tuna sandwiches.
   - Some of the men ate the apples (that) I left on the table.
   - Whenever he feels like exercising, the fat man eats a huge meal instead.

3. Math Writing

Some important expression for this season are;

a. What is the length of one side of a square that has an area of 144 square inches?
b. A square has an area of 576 square meters. What is the length of one of its sides?
c. Find the length of one of the sides of a square that has an area of 3,600 square centimeters.

Questions and Answers

1) What is $\sqrt{25}$?
   The problem is asking you to calculate the square root of 25. Ask yourself what number multiplied by itself equals 25. If you have memorized the list of common squares, this problem is not very hard. Even if you haven't learned the list of common squares yet, though, you can figure this problem out: 5 × 5 = 25. So the square root of 25 is 5.

2) What is the length of one side of a square that has an area of 121 square inches?

   The problem is asking you to calculate the square root of 121. Ask yourself what number multiplied by itself equals 121? You know that 11 × 11 is 121. Thus, the square root of 121 is 11, and the length of one side of a square with an area of 121 square inches is 11 inches.

3) Which of the following is equivalent to $\sqrt{196}$?
   a. 13
   b. 14
   c. 15
   d. 16
   e. 17

   Answer
   b. $\sqrt{196}$ = 14 because 14 x 14 = 196.

4) What is the length of one side of a square that has an area of 144 square inches?

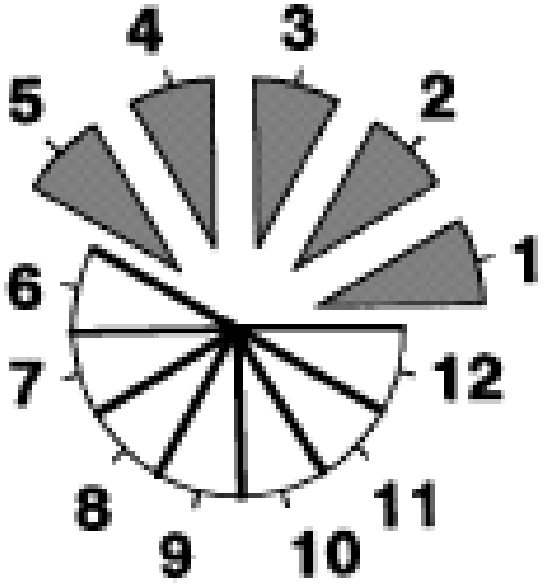
Answer
The problem is asking you to calculate the square root of 144. Ask yourself what number multiplied by itself equals 144. You know that 12 × 12 is 144. Thus, the square root of 144 is 12, and the length of one side of a square with an area of 144 square inches is 12 inches.

5) A square has an area of 576 square meters. What is the length of one of its sides?

Answer
The problem is asking you to calculate the square root of 576. The square root of 576 is 24, and the length of one side of a square with an area of 576 square meters is 24 meters.

6) Find the length of one of the sides of a square that has an area of 3,600 square centimeters.

Answer
The problem is asking you to calculate the square root of 3,600. The square root of 3,600 is 60, and the length of one side of a square with an area of 3,600 square centimeters is 60 centimeters.



UNIT THREE

FRACTION

The Role of Spelling

1. We form plurals in English by adding-s or-es.
   shoes
   porches
   boxes
   bushes
   blitzes

2. For words ending in a consonant plus-y, change the-yto-iand add-es. For proper nouns, keep the-y.
   toys
   companies
   Kennedys

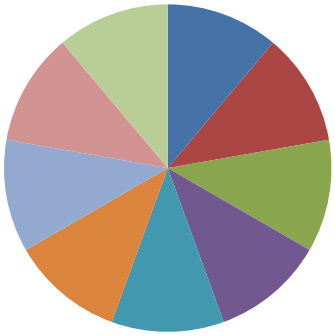
READING SPACE

1. **Comprehending a Text**
   Bacalah dan terjemahkan teks bacaan di bawah ini, temukan kata-kata yang sulit dan penting menurut anda kemudian jawablah pertanyaan - pertanyaan

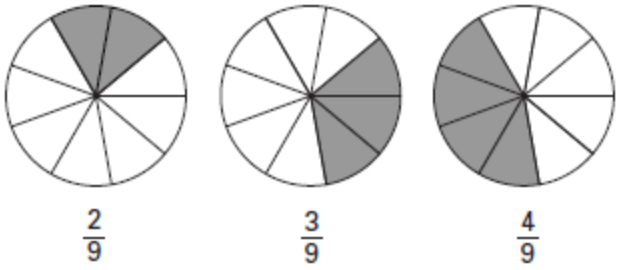
Fraction

We use fractions to talk about money. For example, a quarter is 25 cents, or ¼ of a dollar. Four quarters, or ¼, equal one dollar. We also use fractions to talk

about time. An hour is a fraction of a day. One hour is $\frac{1}{24}$ of a whole day. One day is a fraction of a week: $\frac{1}{7}$. What fraction of a year is one month? Your school grades are probably written in fractions. If you receive a 90 out of a total of 100 possible points, then your grade is the fraction $\frac{90}{100}$. Some teachers grade out of 20 possible points. If you receive a 19 out of 20 points, then your grade is the fraction $\frac{19}{20}$.



What is fraction? Imagine that you and a friend order a whole pizza for yourselves. The pizza is cut into nine slices. If one of you eats the whole pizza and doesn't share with the other one, then you would eat nine of the nine slices, or $\frac{9}{9}$. But what if you ate two slices and your friend ate three slices? Then you ate $\frac{2}{9}$ of the pizza, your friend ate $\frac{3}{9}$ of the pizza, and $\frac{4}{9}$ of the pizza is left over. The number $\frac{2}{9}$, $\frac{3}{9}$, and $\frac{4}{9}$ are all fractions.



Notice

That *fractions* are two numbers that represent a part of a whole. The two numbers are separated by a bar. The bar means "divide the top number by the bottom

number." The top number is called the *numerator*. The numerator tells you how many parts of the whole are being talked about. For example, $\frac{2}{9}$ of the pizza shown above refers to two slices of a pizza that has been cut into nine slices. The bottom number in a fraction is called the *denominator*. The denominator tells you how many equal parts the whole has been divided into. The pizza shown previously has been divided into nine slices, so the denominator is 9. What if you had cut the pizza into eight slices? Then the denominator would be 8.

Vocabularies

.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

Question

1. What is numerator?

   .....

   .....
2. What is denominator?

   .....

   .....
3. What is equivalent?

   .....

   .....
4. What is the fraction of day? Write down its fraction!

   .....

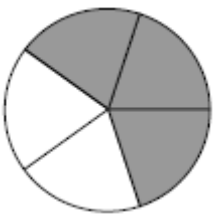
   .....
5. What is the fraction of week? Write down its fraction!

   .....

   .....
6. What is the fraction of year? Write down its fraction!

   .....

   .....
7. Write a fraction to represent the part of each whole that is shaded in.

a. 

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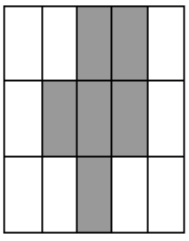
c. 

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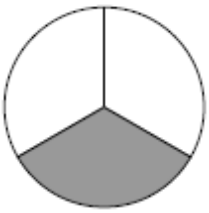
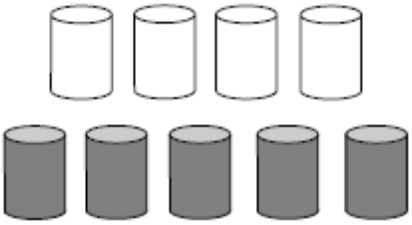
b.



.....

d.



.....

MATH FOCUS

1. Multiplying Fractions

To multiply fractions, simply multiply the numerators and the denominators:

$$\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$$

2. Reciprocals

What is reciprocal and swap?

To find the reciprocal of any fraction, swap its numerator and denominator.

Examples Fraction: $\frac{1}{4}$ Reciprocal: $\frac{4}{1}$

3. Dividing Fractions

Dividing a fraction by another fraction is the same as multiplying the first fraction by the **reciprocal** of the second fraction:

$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c} = \frac{a \times d}{b \times c}$$

4. Adding and Subtracting Fractions with Like Denominators

To add or subtract fractions with like denominators, add or subtract the numerators and leave the denominator as it is:

$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c} \qquad \frac{1}{6} + \frac{4}{6} = \frac{1+4}{6} = \frac{5}{6}$$

$$\frac{a}{c} - \frac{b}{c} = \frac{a-b}{c} \qquad \frac{5}{7} - \frac{3}{7} = \frac{5-3}{7} = \frac{2}{7}$$

5. Adding and Subtracting Fractions with Unlike Denominators

To add or subtract fractions with unlike denominators, find the **Least Common Denominator**, or **LCD**, and convert the unlike denominators into the LCD. The LCD is the smallest number divisible by each of the denominators.

For example, the LCD of $\frac{1}{8}$ and $\frac{1}{12}$ is 24 because 24 is the least multiple shared by 8 and 12. Once you know the LCD, convert each fraction to its new form by multiplying both the numerator and denominator by the necessary number to get the LCD, and then add or subtract the new numerators.

Example

$\frac{1}{8} + \frac{1}{12}$	LCD is 24 because $8 \times 3 = 24$ and $12 \times 2 = 24$.
$\frac{1}{8} = 1 \times \frac{3}{8} \times 3 = \frac{3}{24}$	Convert fraction.
$\frac{1}{12} = 1 \times \frac{2}{12} \times 2 = \frac{2}{24}$	Convert fraction.
$\frac{3}{24} + \frac{2}{24} = \frac{5}{24}$	Add numerators only.

Practice Question

Which of the following expressions is equivalent to $\frac{5}{8} \div \frac{3}{4}$?

a. $\frac{1}{3} + \frac{1}{2}$
b. $\frac{3}{4} + \frac{5}{8}$
c. $\frac{1}{3} + \frac{2}{3}$
d. $\frac{4}{12} + \frac{1}{12}$
e. $\frac{1}{6} + \frac{3}{6}$

Answer
a. The expression in the equation is

$$\frac{5}{8} \div \frac{3}{4} = \frac{5}{8} \times \frac{4}{3} = \frac{5 \times 4}{8 \times 3} = \frac{20}{24} = \frac{5}{6}$$

So you must evaluate each answer choice to determine which equals $\frac{5}{6}$

Answer choice **a**: $\frac{1}{3} + \frac{1}{2} = \frac{2}{6} + \frac{3}{6} = \frac{5}{6}$.
Answer choice **b**: $\frac{3}{4} + \frac{5}{8} = \frac{6}{8} + \frac{5}{8} = \frac{11}{8}$.
Answer choice **c**: $\frac{1}{3} + \frac{2}{3} = \frac{3}{3} = \frac{6}{6} = 1$.
Answer choice **d**: $\frac{4}{12} + \frac{1}{12} = \frac{5}{12}$.
Answer choice **e**: $\frac{1}{6} + \frac{3}{6} = \frac{4}{6}$.

Therefore, answer choice **a** is correct.

GRAMMAR

Adjectives

Adjectives describe nouns and pronouns. They give you more information about people, places, and things.

Kinds of Adjectives

a. Adjectives tell about the size of people or things.

a big house	**a long bridge**	**tiny feet**	**a large army**
a high mountain	big hands	a huge ship	a short man
a short skirt	a tall building	a thin boy	long trousers

b. Adjectives tell about the color of things.

a red carpet	a gray suit	a brown bear
a white swan	an orange balloon	green peppers
a blue uniform	a yellow ribbon	black shoes

c. Adjectives tell what people or things are like by describing their quality.

a beautiful woman	a young soldier	a flat surface	a cold winter

a handsome boy	an old uncle	a hot drink	a sunny day
a rich couple	a poor family	a deep pool	cool weather
a strange place	a familiar voice	a kind lady	

d. Adjectives tell what things are made of. They refer to substances.

a plastic folder	**a porcelain vase**	**a clay pot**	**a silk dress**
a paper bag	a concrete road	a glass door	a metal box
a cotton shirt	a wooden spoon	a stone wall	a jade ring

e. Adjectives are made from proper nouns of place.

These adjectives are called adjectives of origin.

a Mexican hat	**a British police officer**	**a Spanish dance**
the French flag	an American custom	an Italian car
a Japanese lady	Washington apples	a Filipino dress
an Indian temple		

6. The Order of Adjectives

Adjectives are used to describe a single noun or pronoun. When you use two or more adjectives, the usual order is: size, quality, color, origin, substance. For example:

a small size	Green color	plastic box substance
a stylish quality	Red color	Italian car origin

Here are more examples.

a large Indian temple	a long Chinese silk robe
delicious Spanish food	a colorful cotton shirt
crunchy Australian apples	an old graceful Japanese lady
a tall white stone building	a short handsome English man

Adjectives of quality sometimes come before adjectives of size. For example:
beautiful long hair
elegant short hair

Adjectives of size always come before adjectives of color. For example:
beautiful long black hair
elegant short red hair

If you use any adjective of substance, it comes after the color adjective. For example:
a beautiful long black silk dress

7. Adjective Endings

Adjectives have many different endings.

a. Adjectives end in -ful.

These adjectives describe noun or pronouns that are full of something or have a lot of something.

a beautiful face	a painful injury	a careful student
a cheerful baby	a joyful smile	a helpful teacher
a powerful machine	a wonderful time	playful children
a skillful player	a useful book	colorful clothes

b. Adjectives end in -ous.

a famous writer	a courageous soldier	a generous gift
a mountainous area	an adventurous explorer	a humorous film
a dangerous job	mischievous children	marvelous results
a poisonous snake		

c. Adjectives end in -y.

a messy room	**a noisy car**	**dirty hands**	**an easy test**
a sleepy dog	a cloudy sky	thirsty children	a lazy worker
a muddy path	a sunny day	stormy weather	juicy fruit

d. Adjectives end in -less.

Describe a person or thing that does not have something.

a cloudless sky	a meaningless word	homeless people
a sleeveless dress	a fearless fighter	harmless animals
a careless driver	a useless tool	seedless grapes
a joyless song		

e. Adjectives end in -al.

a national flag	a coastal town	magical powers
musical instruments	personal possessions	medical equipment
electrical goods	a traditional costume	

f. Adjectives end in -ic, -ish, -ible, -able, -ive, -ly.

a fantastic singer	**a terrible mess**	**an imaginative story**
an energetic dog	a sensible answer	expensive jewelery
basic grammar	horrible smells	talkative children
enthusiastic shouting	visible footprints	a creative artist
a selfish act	a likeable child	friendly teachers
foolish	comfortable	a lovely dress

behavior	clothes	
stylish clothes	valuable advice	a lively cat
childish talk	suitable colors	an elderly man

g. Adjectives end in -ing.

loving parents	a boring story	an outstanding swimmer
a caring nurse	a gleaming car	an exciting ride
a flashing light	an interesting book	chattering monkeys
a smiling face	a disappointing result	shocking news

8. Describing What Something Is Made Of

Some nouns can be used like adjectives.

For example, if you have a chair that is made of plastic, you can use the noun plastic as an adjective and say that the chair is a plastic chair. If you have a watch that is made of gold, you can say it is a gold watch. But the nouns wood and wool can't be used like this. To make adjectives of these nouns you have to add en.

noun	adjective	example
wood	wooden	a wooden door
wool	woolen	a woolen jumper

9. Describing What Something Is Like

There's another way to make adjectives from nouns. Suppose you want to say that something is like a certain material, although not made of it. To make these adjectives, add -en to some nouns and -y to other nouns.

noun	adjective	example
gold	golden	a golden sunrise (= bright yellow like gold)
silk	silky or silken	silky skin (= as soft as silk)
lead	leaden	a leaden sky (= dark gray like the color of lead)

10. The Comparison of Adjectives

a. The Comparative Form

To compare two people or things, use the comparative form of an adjective. The comparative form is usually made by adding er to the adjective.

adjective	comparative form	adjective	comparative form
dark	darker	old	older
hard	harder	slow	slower
light	lighter	young	younger
warm	warmer	rich	richer
high	higher	poor	poorer
cold	colder	tall	taller
low	lower	small	smaller
fast	faster	soft	softer

Note

The word than is often used to compare two things or people. For example, you say:
Mr. Lee is taller than Philip.
A car is faster than a bike.

b. The Superlative Form

When you compare three or more people or things, use the superlative form of an adjective. The superlative form is usually made by adding est to the adjective.

adjective	superlative form	adjective	superlative form
dark	darkest	old	oldest
warm	warmest	young	youngest
light	lightest	rich	richest
cold	coldest	poor	poorest
high	highest	tall	tallest
fast	fastest	small	smallest
low	lowest	soft	softest
slow	slowest	hard	hardest

Note

The word the is often used before the superlative form. For example:

- A bee is a small insect.
- A ladybird is smaller, but an ant is the smallest.

If the adjective ends in e, add r to form the comparative and st to form the superlative.

adjective	comparative	superlative

nice	nicer	nicest
close	closer	closest
large	larger	largest
rude	ruder	rudest
safe	safer	safest
wide	wider	widest

Suppose the adjective is a short word that ends in a consonant and has a single vowel in the middle. Just double the consonant and add er to make the comparative and est to make the superlative.

adjective	comparative	superlative
sad	sadder	saddest
wet	wetter	wettest
slim	slimmer	slimmest
thin	thinner	thinnest
big	bigger	biggest

Suppose the adjective has two syllables and ends in y. Just change the y to I and add er to make the comparative and add est to make the superlative.

adjective	comparative	superlative
easy	easier	easiest
heavy	heavier	heaviest
funny	funnier	funniest
lovely	lovelier	loveliest
dirty	dirtier	dirtiest
pretty	prettier	prettiest
noisy	noisier	noisiest
tidy	tidier	tidiest

happy	happier	happiest
friendly	friendlier	friendliest
naughty	naughtier	naughtiest
tiny	tinier	tiniest

Exercise 13

Read the following passage and underline the adjectives. Write S above adjectives of **size**, C above adjectives of **color**, Q above adjectives of **quality** and O above adjectives of **origin**.

Sydney is a large Australian city with busy streets and expensive shops. In summer, it's a very hot place. People wear cool clothes and drink cool drinks. There are beautiful sandy beaches where people can rest and look up at the wide blue sky. There are big parks for tourists to visit. Japanese tourists like to sit and watch other people. British tourists take photographs of the strange plants and colorful birds.

Exercise 14

The following sentences contain adjectives made by adding endings to nouns. Write the noun that each adjective comes from on the line after each sentence.

She's always making careless mistakes.

It was a very painful injury.

Witches and wizards have magical powers.

These oranges are very juicy.

Dogs are usually more energetic than cats.

Our neighbors are not very friendly.

She keeps her toys in a large wooden box.

Take off your muddy shoes before you come in.

May I borrow your pencil sharpener? Mine is useless.

What a beautiful dress!

Exercise 15

Fill in the blank spaces with adjectives made from the verbs in parentheses. Remember that both present participles and past participles can be used as adjectives. Choose the adjective that suits the sentence best. *The first one has been done for you*.

1. It wasn't a very interesting (interest) movie.
2. We could hear the ……(excite) fans screaming.
3. I hope the pupils don't think that my classes are ……(bore).
4. My dad had a very …… (worry) look on his face.
5. Have the police found the ……(steal) car yet?

6. The supermarket sells lots of ……(freeze) food.
7. The players on the ……(.win) team don't look tired at all.
8. Some of the old houses had ……(break) windows.

SPEAKING

Using fraction for daily life

Kaka	:	Do you know? My uncle will back from Mataram tomorrow.
Adi	:	Yes, he promise to us for Pitza
Bimbi	:	Waw! Tomorrow we will study together here, will we?
Kaka	:	I see. I told him yesterday. Firstly, we have to cut the Pitzza to equal part.
Adi	:	Oh no!
Kaka	:	We have to cut a half for my family.
Bimbi	:	No problem!
Kaka	:	So, a half of Pitzza will divide to a three parts. I don't know how to divide fairly.
Bimbi	:	We have a half of Pitza, so we have divide to three part; $^1/_3$ for Kaka, $^1/_3$ for Adi, and $^1/_3$ for me.
Kaka	:	It is not fair!
Adi	:	Ok. We have a part, its mean ½ but we have to divide to three part. Let's see the

fraction in order to get a fair quotien.

$$^1/_2 : 3 = {}^1/_2 : {}^3/_1$$

$$^1/_2 : {}^3/_1 = {}^1/_2 \times {}^1/_3$$

$$^1/_2 \times {}^1/_3 = {}^1/_6$$

Bimbi	:	That's right. We have to cut the Pitzza to six parts; two parts for Kaka, two parts for Adi, and two parts for me.
Kaka	:	It is really fair quotient.

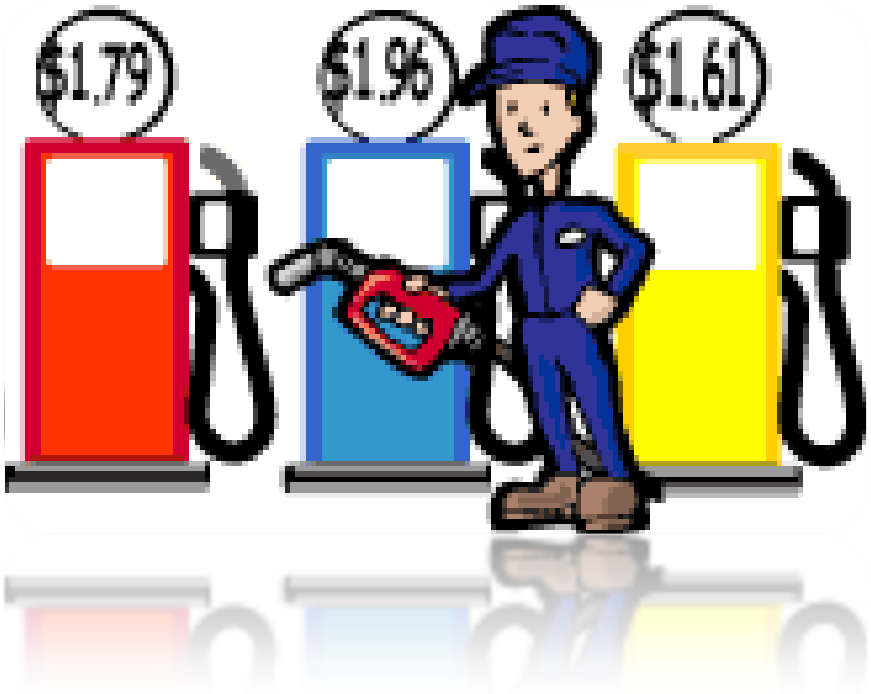
WRITING

Anda masih mengingat kolom-kolom the part of simple sentence, kalau anda lupa silahkan buka buku anda! Tulislah cerita berikut ini ke dalam kolom yang telah di siapkan. Dengan demikian, pada sesi ini anda akan latihan menempatkan komponen kalimat pada tempat yang sebenarnya.

Aunt Mary had a problem with her teeth. She went to the dentist yerterday. Five people were sitting in the waiting room. All those patients were waiting patiently. They sat in row very neatly. Some were reading old magazine. Some were staring at the ceiling. No one talked.

Aunt Mary sat nest to a man. He was sitting at the corner. He was trying to make conversation, "You have toothace, I don't" Anne Marry mumbled. She couldn't talk. The man was persistent. He talked a lot. He laughed a lot. Finally, he burst out laghing. He couldn'd help it. Everybody looked anggrily at him. Everybody with toothaches should have been angry.

6	1	2	3	4	5	6
When?	S	V	O	How?	Where?	When?



UNIT FOUR

DECIMAL

The Role of Spelling

How to Pronounce -ed in English

Kata kerja regular dalam bentuk past simple tense dan past participle yang diakhiri dengan –ed. contohnya

base verb (v1)	past simple (v2)	past participle (v3)
work	work**ed**	work**ed**

Sebagai tambahan, beberapa kata sifat (**adjectives)** dibentuk dari past participle yang berakhiran **-ed**. Contohnya: *I like paint**ed** furniture*.

Jawaban terhadap: How do we pronounce the -ed?

Yaitu: **dengan tiga cara - / Id/ or / t/ or / d/**

If the base verb ends in one of these sounds:		example base verb*:	example with -ed:	pronounce the -ed:
unvoiced	/t/	want	wanted	/ Id/
voiced	/d/	end	ended	
unvoiced	/p/	hope	hoped	/ t/
	/f/	laugh	laughed	
	/s/	fax	faxed	
	/S/	wash	washed	
	/tS/	watch	watched	
	/k/	like	liked	
voiced	all other sounds, for example	play	played	/ d/
		allow	allowed	
		beg	begged	

Note

Fax ends in the letter "x" but the sound /s/;

Like ends in the letter "e" but the sound /k/.

Exceptions

The following -ed words used as adjectives are pronounced with /ld/:

aged	**dogged**	**ragged**
blessed	learned	wicked
crooked	naked	wretched

READING

1. Comprehending a Text

Bacalah dan terjemahkan teks bacaan di bawah ini, temukan kata-kata yang sulit dan penting menurut anda kemudian jawablah pertanyaan - pertanyaan

Decimal

Decimal is a special kind of fraction that you use every day when you deal with measurements or money. You will learn what decimals are and how to read them. You'll compare them, convert them to fractions, and you will also

learn how to perform mathematical operations with them.

Decimals are numbers written with a dot, or a period, either to the far left or somewhere in the middle. The dot is called a *decimal point*. The numbers to the left of the decimal point are whole numbers. Those to the right of the decimal point are fractions, or parts, of whole numbers.

When you see a decimal, here's how to read it. **Step 1:** Begin reading from left to right. Read the part of the number that is to the left of the decimal point as you would any other whole number. **Step 2:** Read the decimal point as the word *and*. **Step 3:** Read the number to the right of the decimal point as you would any other number. But then follow it with the name of the decimal. You can determine the name of the decimal by counting the number of digits to the right of the decimal point.

You probably already know that each digit in the number 1,234 represents a place value. A *place value* is a position in the number. So, for example, the 1 in 1,234 stands for 1 thousand. The 2 stands for 2 hundreds, the 3 stands for 3 tens, and the 4 stands for 4 ones. These are the place values that occur to the *left* of a decimal point. Each digit to the *right* of a decimal point also has a place value. The names and positions of several place values are shown below.

hundred-thousands	ten-thousands	thousands	,	hundreds	tens	ones	.	tenths	hundredths	thousandths	ten-thousandths	hundred-thousandths

Vocabularies

.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

Questions

Jawablah pertanyaan-pertanyaan di bawah dengan singkat dan jelas!

1. What is decimals number?
   .....
   .....
2. What is the symbol of decimal numbers?
   .....
   .....
3. Where is the position of dot and period symbol of decimal numbers?
   .....
   .....

4. What is called a decimal point?
   .....
   .....
5. What are numbers to the left of the decimal point?
   .....
   .....
6. What are those to the right of the decimal point?
   .....
   .....
7. How to read a decimal?
   .....
   .....
8. What is place value?
   .....
   .....
9. What is the posisition number of hundret at decimal point?
   .....
   .....
10. How to compare decimal numbers?
    .....
    .....

MATH FOCUS

Comparing Decimals

When comparing decimals less than one, line up the decimal points and fill in any zeroes needed to have an equal number of digits in each number.

Example
Compare 0.8 and 0.008.
Line up decimal points and add zeroes 0.8**00**
0.008.
Then ignore the decimal point and ask which is greater: 800 or 8? 800 is bigger than 8, so 0.8 is greater than 0.008.

GRAMMAR

1. Punctuation

Independent clauses can be connected (or separated, depending on your point of view) in a variety of ways. When two ideas come together and either one of them can stand by itself — as its own, independent sentence — the following kinds of punctuation are possible. (Review, also, the sections on Coherence: Transitions between Ideas and on avoiding Run-on Sentences.)

Period + start a new sentence

My grandmother refuses to go to bed early. She thinks she's going to miss out on some of the action.

Comma + conjunction (and, but, for, nor, yet, or, so)

My grandmother refuses to go to bed

early, and I'm afraid she's going to catch a bad cold.

Semicolon by itself. Where you have used a semicolon, you could have used a period, but the semicolon, you felt, is better (probably because the independent clauses are so closely related and nicely balanced).

In spite of her cold, my grandmother refuses to go to bed early; she is afraid she will miss something.

Semicolon + conjunction or other transitional expression however (bagaimanapun, betapapun, biarpun. -**ksam**. (akan) tetapi), moreover (selain itu, lagi pula, tambahan lagi, nevertheless (namun, meskipun begitu/demikian), therefore(oleh karena itu), as a result, consequently . . .) **followed by a comma.**

My grandmother has stayed up late four nights in a row; as a result, she cannot seem to get well.

2. The Conjuction of Compound Senteces

Berikut ini beberapa kata sambung (conjunction) yang digunakan untuk menghubungkan dua kalimat majemuk setara (compounde sentence) dan contohnya.

Joining Words	Examples
and	Anne likes the butcher **and** the baker
so	Anne likes the baker **so** he goes to baker shop every day
but	Anne like the baker **but** she don't like chocolate
yet/but	Anne like the fred chiken **yet** hate cooked chiken
or	Does Anne like fred chiken **or** cooked chiken?
Both – and (kedua-duanya)	Anne likes **both** the butcher **and** the baker
Either – or (salah satu dari)	Anne must choose **either** butcher **or** baker
Neither – nor (tidak satupun dari keduanya)	**Neither** Anne **nor** Budy like the swimming
Not only – but – as well (tidak hanya "ini" tetapi "itu" pula)	Anne **not only** like the baker **but** goes to baker shop every day **as well**
Not only – but also	Anne **not only** likes the baker **but also** goes to baker shop every day

3. Joining two sentences

Cara menggabungkan dua kalimat setara (compound sentence):

1. Garis bawahi bagian kalimat yang sama
2. Pastikan kedua tenses kalimat sama.

He finished his lunch. He went bock to his office

He finished his lunch and went back to his office

I did not know the answer. I asked a friend
I did not know the answer **so** I asked a friend

I asked udin, he did not know the answer
I asked Udin **but** he did not know the answer

Shall I talk to Nina? Shall I talk to Nini?
Shal I talk to Nina **or** Nini

I like apples. I like oranges
I lke **both** apples **and** oranges
I lke **either** appel **or** oranges
I like **not only** apples **but** oranges **as well**
I like **not only** apples **but also** oranges

I don't like apples. I don't like oranges
I like **neithe**r apples **nor** oranges

Note:
Dengn kata sambung neither – nor di atas auxiliary verb don't tidak ditulis karena diwakili oleh neither (not either) dan nor (not or)

SPEAKING

Using decimal for prize

Decimal is a special kind of fraction that you use every day when you deal with measurements or money. The following expressions are show the decimal of prize.

A	:	**Where are the pencils?**
B	:	They're on the second shelf.
C	:	Okay, thanks.
A	:	How much is this mirror?
B	:	It's $19.95.
C	:	Okay. I'll take it.
A	:	How much does this cost?
B	:	That one is $5.00.
C	:	How about this one?
A	:	How much are these?
B	:	They're $4.00 each
C	:	That's too expensive
A	:	Do you have any t-shirts?
B	:	What size? Medium or Large?
C	:	Large.
A	:	That comes to $26.59.
B	:	Here's $30.00.
C	:	Your change is $3.41
A	:	That will be $17.48.
B	:	Here's $17.50. Keep the change.
C	:	Thanks.

Express these and fill the blank sentences!

1. Where are they?
   They are over there ..... I am here,
   ..... they will come soon

2. What are you going to say?
   I shall to say good job ..... you have a
   mistake at number two

WRITING

Let's Write Precise

Menulis Precis atau ringkasan dengan kalimat sederhana.

Exercise 18

Susunlah kalimat di bawah ini menjadi kalimat yang benar!

1. Aunt Mary – to the dentist – went – yersterday.
   .....
2. Spoke – slowly – Tina.
   .....
3. Noel – ran – to the street.
   .....
4. Fragnant flowers – in good soil – grow.
   .....
5. Beautifully – the children – behave.
   .....
6. The shop – good groceries – sells
   .....
7. Does not talk to – Mary – the man.

.....

8. Near here – the hospital – is.

.....

9. Drinks – the baby – a lot of milk.

.....

10. The news – listenet to – I – carefully.

.....

Exercise 19

Latihan berikutnya adalah menulis sebuah cerita pendek. Untuk membuat cerita pendek ini, anda akan dituntun oleh beberapa kalimat berikut. Munkin anda pernah tidak menyukai seseorang, pikirkan dia sekarang dan isilah titik pada beberapa kalimat di bawah ini.

Kalimat di bawah ini digunakan untuk menulis sebuah cerita.

I don't like	.....
How is she? Is he horrible?	.....
How does she walk?	.....
How does she eat?	.....
How does she speak?	.....
Does she live with you?	.....
Can you feel her presence all the time?	.....
Does this make yiu anggry?	.....
Did you meet her yesterday?	.....
What did she do to you?	.....
What else did she do?	.....
Dit it make you hate her more?	.....

Tulislah kalimat tersebut menjadi sebuah cerita, di bawah ini!

I don't like Minah. She is horrible. ……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……

Write Decimal Question

Berikut ini adalah contoh soal dan penjelasan yang membahas tentang decimal. Perhatikan soal ini dan buatlah di buku kerja anda soal yang serupa tapi tidak sama.

Which of the following inequalities is true?
a. 0.04 < 0.004
b. 0.17 < 0.017
c. 0.83 < 0.80

d. 0.29 < 0.3
e. 0.5 < 0.08

Answer d.
Answer choice **a**: 0.**040** > 0.**004** because 40 > 4. Therefore, 0.04 > 0.004. This answer choice is FALSE.

Answer choice **b**: 0.**170** > 0.**017** because 170 > 17. Therefore, 0.17 > 0.017. This answer choice is FALSE.

Answer choice **c**: 0.**83** > 0.**80** because 83 > 80. This answer choice is FALSE.

Answer choice **d**: 0.**29** < 0.**30** because 29 < 30. Therefore, 0.29 < 0.3. This answer choice is TRUE.

Answer choice **e**: 0.**50** > 0.**08** because 50 > 8. Therefore, 0.5 > 0.08. This answer choice is FALSE.

UNIT FIVE

STATISTIC

READING

1. Comprehending a Text

Bacalah dan terjemahkan teks bacaan di bawah ini, temukan kata-kata yang sulit dan penting menurut anda kemudian jawablah pertanyaan - pertanyaan

STATISTIC

Statistics are everywhere in news reports, sports, and on your favorite websites. Mean, median, and mode are three common statistics that give information on a group of numbers. They are called *measures of central tendency* because they are different ways of finding the central trend in a group of numbers. Ratios and proportions are ways to compare these statistics. Similarly, you see probabilities or predictions all the time. Listening to the weather report, you may hear that there is a 60% chance of rain tomorrow. At karate lessons, you may hear that 19 out of 20 advanced students will attain a brown belt. On television, you might hear that four out of five dentists recommend a certain toothbrush. These are all ways to express probability. In this section, you will also learn what probability is and how to calculate it.

Exercise 20

Jawablah pertanyaan di bawah ini!

1. Where can you find statistics?

   .....

   .....

2. What are kind of statistics that give information on a group of numbers?

   .....
   .....

3. What are called measure of central tendency?

   .....
   .....

4. What are ways to compare the statistics?

   .....
   .....

5. Where can you find ratios and proportions?

   .....
   .....

MATH FOCUS

1. Mean

Mean is just another word for *average*. The mean, or average, is one of the most useful and common statistics. You probably already average your grades at school regularly, so you may already know the basic steps to finding the mean of a set of numbers.

Step 1: Add all the numbers in the list.
Step 2: Count the number of numbers in the list.
Step 3: Divide the sum (the result of Step 1) by the number (the result of Step 2). Another way to think about the mean is in the form of this equation:

$$Mean = \frac{the\ sum\ of\ the\ numbers}{the\ number\ of\ numbers}$$

Example
Find the mean of the following set of numbers: 5, 7, 19, 12, 4, 11, 15.

Step 1: Add all the numbers in the list.
5 + 7 + 19 + 12 + 4 + 11 + 15 = 73

Step 2: Count the number of numbers in the list.
There are seven numbers in the list.

Step 3: Divide the sum (the result of Step 1) by the number (the result of Step 2). $\frac{73}{7}$ = 10.4

So, the mean is 10.4.

2. Median

The *median* is the middle number in a group of numbers arranged in sequential order. In a set of numbers, half will be greater than the median and half will be less than the median.

Step 1: Put the numbers in sequential order.

Step 2: The middle number is the median.

Example:
Find the median of the following set of numbers: 5, 7, 19, 12, 4, 11, 15.

Step 1: Put the numbers in sequential order.
4, 5, 7, 11, 12, 15, 19

Step 2: The middle number is the median. The middle number is 11.

So, 11 is the median.

3. **Mode**

The mode refers to the number in a set of numbers that occurs most frequently. To find the mode, you just look for numbers that occur more than once and find the one that appears *most* often.

Example:
Find the mode of the following set of numbers: 5, 7, 9, 12, 9, 11, 15.

The number 9 occurs twice in the list, so 9 is the mode.
Example:
Find the mode of the following set of numbers: 5, 7, 19, 12, 4, 11, 15.

None of the numbers occurs more than once, so there is no mode.

Example:
Find the mode of the following set of numbers: 5, 7, 9, 12, 9, 11, 5.

The numbers 5 and 9 both occur twice in the list, so both 5 and 9 are modes. When a set of numbers has two modes, it is called *bimodal.*

4. **Ratio**

Ratios and proportions are often found in textbooks and news reports. You'll also find them in math word problems. **What are rasios?** A *ratio* is a way of comparing two or more numbers. There are several different ways to write ratios.

Here are some examples of ways to write ratios.

with the word *to*: 1 to 2
using a colon (:) to separate the numbers: 1 : 2
using the term *for every*: 1 for every 2
separated by a division sign or fraction bar: ½

Example:
Write the following ratio as a fraction: five girls to six boys.
The question asks you to write the ratio as a fraction: $^5/_6$

Example:
A painter mixes two quarts of red paint to three quarts of white paint. What is the ratio of red paint to white paint?

There are several ways you could write this ratio:
2 quarts of red paint to 3 quarts of white paint, or 2 to 3
2 quarts red paint: 3 quarts white paint, or 2:3
$\frac{\text{2 quarts red paint}}{\text{3 quarts white paint}}$ or $\frac{2}{3}$

5. **Proportion**

A *proportion* is a way of relating two ratios to one another. Let's say you read in your school newspaper that 8 out of 10 students at your school are expected to take the PSAT this year. If there are 100 students in your school, then 80 students are expected to take the test this year. This is an example of a proportion. Proportions can be written as equations. For example, this proportion can be written as: $\frac{8}{10} = \frac{80}{100}$. Proportions show

equivalent fractions. Both $\frac{8}{10}$ and $\frac{80}{100}$ reduce to the same fraction: $\frac{4}{5}$

6. Probably

We hear probabilities all the time. Listening to the weather report, you might hear that there is a 60% chance of rain tomorrow. At school, you might hear that 19 of 20 students will pass math this year. On TV, you might hear that $\frac{4}{5}$ of dentists recommend a certain brand of toothpaste. These are all ways of expressing probabilities.

WHAT IS PROBABILITY?

Probability is the mathematics of chance. It is a way of calculating how likely it is that something will happen. It is expressed as the following ratio:

$$\text{P (event)} = \frac{\text{Number of favorable outcomes}}{\text{Number of total outcomes}}$$

The term *favorable outcomes* refer to the events you want to occur. *Total outcomes* refer to all the possible events that could occur. A probability of zero (0) means that the event cannot occur. A probability of 50% is said to be random or chance. A probability of 100% or 1.00 is certain to occur.

Probabilities can be written in different ways:

As a ratio : 1 out of 2 (1:2)
As a fraction : $\frac{1}{2}$
As a percent : 50 %
As a decimal : 0.5

Exercise 21

Fill in the blank with the words given below!

Mean	Median	Mode
Ratio	Proportion	Probably

1. ..... is a way of comparing two or more numbers.
2. ..... is the middle number in a group of numbers arranged in sequential order.
3. ..... is the mathematics of chance. It is a way of calculating how likely it is that something will happen
4. ..... refers to the number in a set of numbers that occurs most frequently.
5. Divide the sum by the number is a way for finding the .....
6. ..... is a way of relating two ratios to one another.

GRAMMAR

Dalam membahas statistik terkadang kita membahas tentang frequensi, dengan demikian materi grammar pada sesi ini membicarakan tentang Adverb of Frequency, comparative, dan superlative.

Adverb of Frequency

a. Adverbs come before the main verb
   Examples;
   - Andy always comes late.
   - Neny often comes late this week.

b. Adverbs come after "be"
   Examples;
   - Udin is always absent this week
   - Minah is never lought.

c. The order of adverbs of frequency

Always	100%	all of the time
Usually	100%	most of the time
Often	50%	much of the time
Sometimes		some of the time
Seldom		almost never
Never	0%	not at any time

Exercise

Kerjakan soal-soal latihan, seperti contoh di bawah!

Udin smokes all of the time
Udin always smokes
Udin drinks milk some of the time
Udin sometimes drinks milk

1. Pather drinks coffee some of the time

   ……
   ……

2. He almost never drinks alcoholic drinks

   ……
   ……

3. Mr. Dedy drinks coffee much of the time

   ……
   ……

4. Mrs. Nonik drinks jamu most of the time

   ……
   ……

5. Mr. Dedi has coffee in the morning most of the time.

   ……
   ……

6. Mrs. Nany has coffee at 10 A.M. all of the time

   ……
   ……

7. Maryna almost never eats in a restaurant.

   ……
   ……

8. Dery eats lunch in restaurant all of the time.

   ……
   ……

9. Amat eats at home much of the time.

   ……
   ……

10. Agus has dinner in a restaurant some of the time.

    ……
    ……

SPEAKING

Expressing Possibility

Berikut ini adalah beberapa contoh kata dan ungkapan yang digunakan untuk membicarakan sebuah kemungkinan (possibility).
May
Might
Can
Could
Maybe
Perhaps
Probably

Contoh dalam percakapan

A :	We can stay here in the classroom for the evening.
B :	I'd rather not. It's only a few minutes of praying.
A :	We may be late for the next subject.
B :	Well, let me know what you decide.
A :	We might not go anywhere but we past praying time.
B :	That's too bad. I hope we choose a better consideration.
A :	We could go to mosque for praying.
B :	That would be better
A :	Or we could go home for a moment.
B :	That would be late

Exercise 22

Say in English

1. Anda tidak mungkin merokok di ruangan ini!
   ……
   ……
   ……

2. Anda tidak boleh meninggalkan ruangan ini sebelum saya datang?
   ……
   ……
   ……

3. Semua siswa tidak diperkenankan mencontek!
   ……
   ……
   ……

4. Sekarang di Pancor panas, hari ini tidak mungkin turun hujan.
   ……
   ……
   ……

5. Dia adalah seorang yang terkenal. Mungkin saja dia akan menjadi ketua.
   ……
   ……
   ……

WRITING

Writing complex sentences

Berikut ini kata sambung yang digunakan untuk menggabungkan kalimat majemuk bertingkat atau complex sentence.

1	**When**
	He ran **when** he shaw me
2	Until
	We shall work **until** we are tired
3	After
	I shall call you **after** I have finished all this work
4	As soon as
	She went home **as soon as** she finished her shopping
5	While
	I was working in the garden **while** Mum was working in the kitchen
6	So …. That (sangat …. Sehingga)
	I was **so** tired **that** I went to sleep immediately
7	Before
	Dinosaurus had been extinct **before** men appeared on earth
8	Because/ as/ since/ for
	He didn't give a word **because/as/since/for** he was affaraid he would tell them the wrong story
9	To/ in order to (untuk)
	He behaves politely **to/in order to** impress the girl
10	So as not to (berarti untuk/ supaya tidak. Kebalikan **in order to**)
	I went to the cake shop **so as not to** meet crazy Tommy

11	Although (berarti **meskipun;** dapat diganti dengan **despite / in spite of**)
	The officer did not let him go **althought** he insisted
12	Who (berarti **yang** untuk orang)
	I don't know **who** you are
13	Which (berarti **yang** untuk selain orang)
	I don't know **which** bike is yours
14	That (berarti **yang** untuk orang dan benda)
	The few **that** came were very enthusiastic
15	Whose (berarti **yang** sebagai kata sambung yang menunjukkan kepemilikan orang)
16	That is Cinta, **whose** rabbit hopped onto your table
	of which (berarti **yang** sebagai kata sambung yang menunjukkan kepemilikan bukan orang)
17	The car, **of which** the rear window is broken, parked outside Cinta's house (of which dapat di ganti dengan **with**)

NOTE

Dalam menggabung kalimat majemuk setara; kedua kalimat menggunakan tenses sama. Sedangkan dalam kalimat majemuk bertingkat tenses, yang dipakai setiap anak kalimat bisa berbeda. Tenses yang digunakan tergantung kepada makna yang ingin disampaikan.

Perhatikan contoh berikut ini!

He missed the train. He did not hurry (past-past)
He missed the train because he did not hurry.
He will go into the dark room. He is afraid (future – present)

He will go into the dark room although he is affraid

I want to go to the bookstore. I want to buy a dictionary (present-present)
I want to go to the bookstore to buy a dictionary.

I found the door unlocked. I went into the house (past – past)
Finding the door unlocked, I went into the house

The house was destroyed in 2000. It has now been completely rebuilt. (past – past)
Destroyed in 2000, the house has now been completely rebuilt.

Exercise

Pilih dan tulis kembali dengan kata sambung yang tepat di bawah ini.

In order to So that Which that Tired of

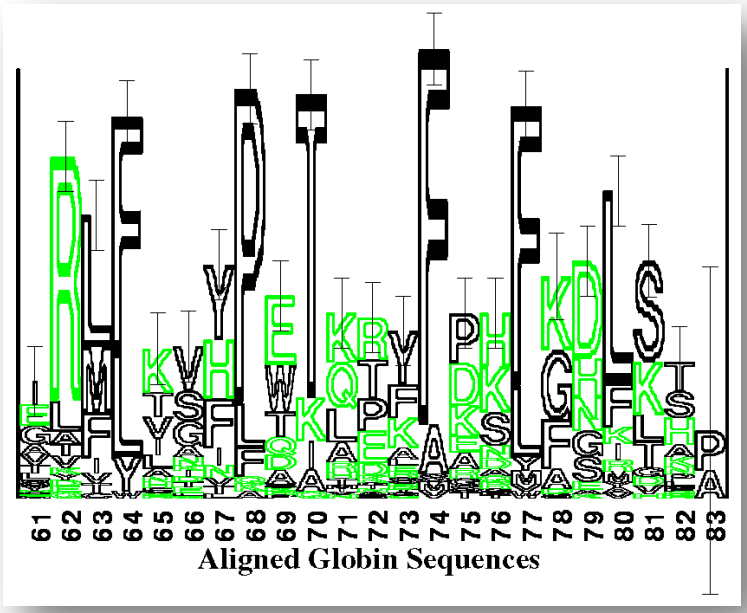
1. He would get home early. He could go to sleep right away.
   ……
   ……
   ……

2. Tomy is very shot. He needs a chair to take the book off the shelf.
   ……
   ……
   ……

3. Aditya was tired of being called lazybones. He wrote of things he would be doing that day
   ……
   ……
   ……

4. She is the most beautiful woman. I ever met her
   ……
   ……
   ……

5. Men work very hard. They want to earn a lot of money and be rich.
   ……
   ……
   ……



UNIT SIX

GRAPS, TABLES, and CHARTS

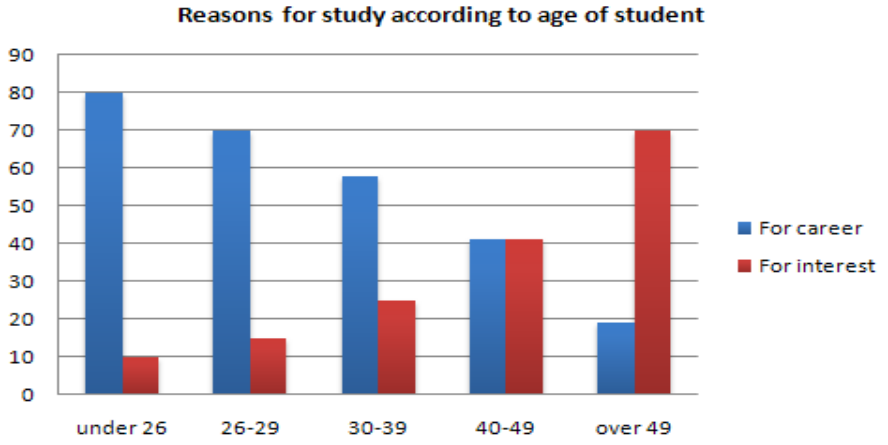
Reading

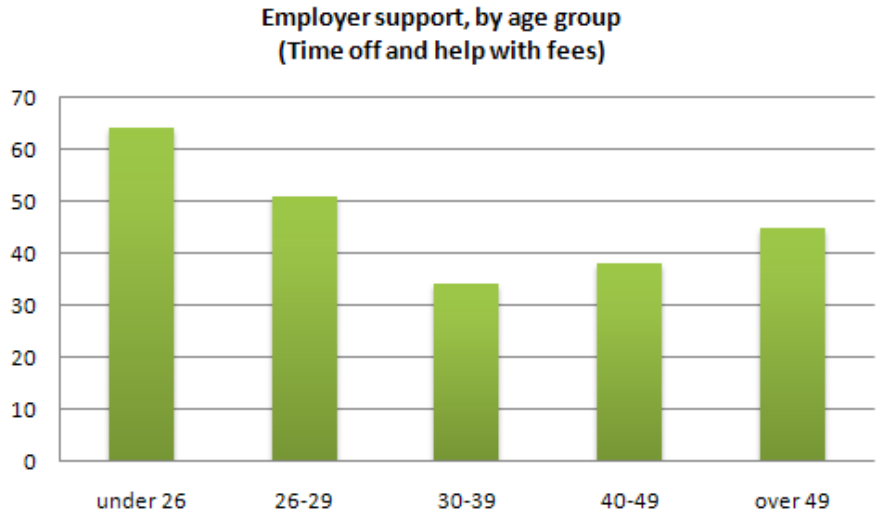
1. Comprehending a Text

Bacalah dan terjemahkan teks bacaan di bawah ini, temukan kata-kata yang sulit dan penting menurut anda kemudian jawablah pertanyaan - pertanyaan

Reasons For Study

The charts below show the main reasons for study among students of different age groups and the amount of support they received from employers.





The first graph shows that there is a gradual decrease in study for career reasons with age. Nearly 80% of students under 26 years, study for their career. This percentage gradually declines by 10-20% every decade. Only 40% of 40-49yr olds and 18% of over 49yr olds studing for career reasons in late adulthood. Conversely, the first graph also shows that study stemming from interest increases with age. There are only 10% of under 26yr olds studing out of interest. The percentage increases slowly till the beginning of the fourth decade, and increases dramatically in late adulthood. Nearly same number of 40-49yr olds study for career and interest. However 70% of over 49yr olds study for interest in comparison to 18% studing for career reasons in that age group.

The second graph shows that employer support is maximum (approximately 60%) for the under 26yr students. It drops rapidly to 32% up to the third decade of life, and then increses in late adulthood up to about 44%. It is unclear whether employer support is only for career-focused study, but the highest level is for those students who mainly study for career purposes.

Exercise

Under construction

Speaking

Simple Presentation

Introduction
(Good morning, afternoon, evening)
I'm happy to be here.
I'm glad to have this opportunity to . . .
Today, I'd like to talk (to you) about . . .
My topic today is . . .
The focus of my remarks is . . .
I'd like to share some thoughts on (topic)

Main points
Let me start by . . .
First, let me tell you about . . .
I've divided my topic into (three) parts: (They are . . .)
Giving examples

For instance,
Let me illustrate,
To illustrate,
Conclusion

In conclusion,
To conclude,
To summarize,
To sum up,