

TEACHER'S NAME: _____

NAME: _____

CLASS: _____

5.1 VARIABLES AND ALGEBRAIC EXPRESSIONS**Notes**

- A variable is a quantity whose value is unknown.
- A variable is fixed if the quantity does not change at any time
- A variable is variable if the quantity changes over time.
- An algebraic expression is a combination of two or more algebraic expressions with operations of addition, subtraction, multiplication and division.

A State the letter of the alphabet that represents the variable.**i)**

Football stadium is filled with p people spectators and q people players.

LETTERS:

__ dan __

ii)

There is a d branded pencil stick in a container

LETTER:

iii)

The car park has n cars

LETTER:

iv)

There are k children playing in the P playground.

LETTER:

B Write one algebraic expression for each given situation.

(Write answers without spacing)

i)

Add 5 to $3f$.

ii)

The difference between 50 and x .

iii)

A box has p blue pen sticks, q red pen sticks and r black pen sticks. Count the number of pens in the box.

iv)

There were y students who were absent this Monday out of a total of 38 students. How many students are present?

C Find the value of the following expression.

i)

Given $3x - y$. Find the value when given $x = 4$ and $y = 6$?

$$= 3(\text{_____}) - \text{_____}$$

$$= \text{_____}$$

ii)

Given $d^2e^3 + 11d$. Find the value when given $d = 4$ and $e = -1$.

$$= \text{_____}$$

iii)

Given $\frac{7v}{3w} - (5 + vw)$. Find the value when given $v = -4$ and $w = -1$.

$$= \text{_____}$$

D Write an algebraic expression for each of the following and solve.

a)

A basket contains 30 apples. Nabihah gave d apple to her sister.

- i) Write an expression for the remaining number of apples owned by Nabihah.

- ii) If $d = 8$, how many apples does Nabihah have?

b)

In class 1 Bestari, the total number of students is 30 people. There were x male students wearing glasses while y of female students wore glasses.

Write an expression for the number of students who do not wear glasses.

- i) If the value of x is 6 and y is 13, how many students do not wear glasses?

E Choose like terms.

-8k, 7k

24r, 6s

3t, 9t

0.5g, 7f

-5m, 5n

2j, 4j

12 z, 30 x

10r, 17r

F Tick / on algebraic expressions in one variable and X if not

$-86 f$	
$15 h j$	
$43 r$	
$0.3 g^2 h$	

G Identify the coefficients for algebraic expressions of $15mn^2 p$.

$15n^2 p$	
n^2	

5.2 ALGEBRAIC EXPRESSIONS INVOLVING BASIC ARITHMETIC OPERATIONS

H Simplify each of the following . (Write closely without spacing in the order given)

- i) $3a - 2b + 5a$ =
- ii) $ab - bc + 3ab$ =
- iii) $0.5pq - 3qr - 0.7pq$ =

iv)

$$-2xy + 4yz - 2xy - 3yz$$

=

v)

$$3p + 4q - 5 + 6q + 1$$

=

I Tick / if the repeated multiplication of the following algebraic expressions is true and X otherwise.

i)	$k \times k \times k = k^2$	
ii)	$(4x - y) \times (4x - y) = (4x - y)^2$	
iii)	$(-a) \times (-a) \times (-a) \times (-a) = -a^4$	
iv)	$(p + 2q) \times (p + 2q) \times (p + 2q) = (p - 2q)^3$	
v)	$\frac{2}{5}h \times \frac{2}{5}h \times \frac{2}{5}h = \left(\frac{2}{5}h\right)^3$	
vi)	$\left(-\frac{2\pi}{3}\right) \times \left(-\frac{2\pi}{3}\right) \times \left(-\frac{2\pi}{3}\right) = \left(\frac{2\pi}{3}\right)^3$	

J Fill in the blanks below with the correct algebraic pronunciation.

i)

$$\boxed{} \times 7n = 21mn^2$$

ii)

$$\frac{5}{3}x^2 \times \boxed{} = 10x^2y$$

iii)

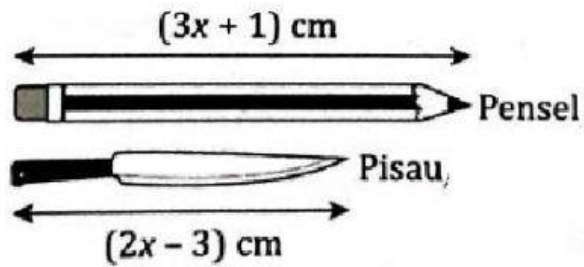
$$7p^2q \div 8pq \boxed{}$$

iv)

$$15ab \div \boxed{} = -5b$$

K SOLVE.

- a The diagram below shows a pencil and a knife.
(Write answers without spacing)



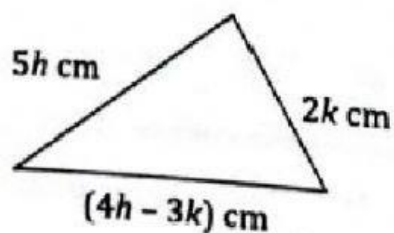
Find the total length, in cm, of the pencil and the knife.

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- b A ruler costs RM p and a pair of scissors costs RM 4. Iman bought 3 rulers and 2 scissors. How much money does he have to pay?
(Write answers without spacing)

=

- c The diagram shows a triangle. (Write answers without spacing)



Find the perimeter, in cm of the triangle above.

=

d	Ah Chong has RM y. His father gave him RM $(2y+3)$. He has spent RM 8 in the canteen. How much money does he have now? (Write answers without spacing) RM =
e	The mass of a packet of salt and a packet of sugar is $3x$ kg and $4x$ kg respectively. The mass of a packet of rice is 2kg less than the total mass of salt and sugar. What is the mass, in kg of the rice? (Write answers without spacing) kg =