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?

$= 3($ _____ $) -$ _____

$=$ _____

ii)

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

$=$ _____

iii)

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

$=$ _____

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 hj	
43 r	
0.3 g^2h	

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

$15n^2p$	
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) $-2xy + 4yz - 2xy - 3yz$ = [green box]

v) $3p + 4q - 5 + 6q + 1$ = [green box]

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)	$\dfrac{2}{5}h \times \dfrac{2}{5}h \times \dfrac{2}{5} = \left(\dfrac{2}{5}h\right)^3$	
vi)	$\left(-\dfrac{2\pi}{3}\right) \times \left(-\dfrac{2\pi}{3}\right) \times \left(-\dfrac{2\pi}{3}\right) = \left(\dfrac{2\pi}{3}\right)^3$	

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

i) [box] $\times 7n = 21mn^2$
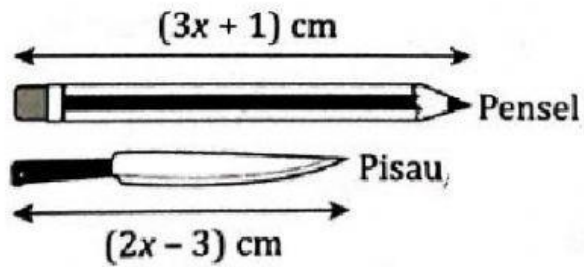
ii) $\dfrac{5}{3}x^2 \times$ [box] $= 10x^2 y$

iii) $7p^2q \div 8pq$ [box]

Iv) $15ab \div$ [box] $= -5b$

K SOLVE.

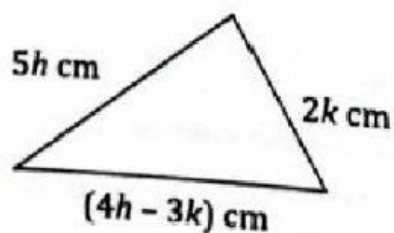|	
a	The diagram below shows a pencil and a knife. (Write answers without spacing) $(3x + 1)$ cm Pensel Pisau $(2x - 3)$ cm Find the total length, in cm, of the pencil and the knife. = _____ [cm]
b	A ruler costs RM p and a pair of scissors costs RM 4. Iman bought 3 rulers and 2 scissors. How much money does he have to pay? (Write answers without spacing) = _____ [RM]
c	The diagram shows a triangle. (Write answers without spacing) $5h$ cm $2k$ cm $(4h - 3k)$ cm Find the perimeter, in cm of the triangle above. = _____ [cm]

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 $\boxed{}$ = _____
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) $\boxed{}$ kg = _____