

TEACHER'S NAME: NAME: CLASS: 

## 6.1 LINEAR EQUATIONS IN ONE VARIABLE

## NOTES

- A linear equation is an equation that involves a combination of one or more algebraic expressions with the power of the variable being one.
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- Example: (Linear Equation in One Variable, Example:  $2x + 3 = 5$ )
- (Linear Equations in Two Variables, Example:  $x + y = 7$ )

A Write for the linear equation below either in one variable or two variables.

(Hint: Write No. 1 or 2 in a circle)

$$\frac{p}{4} + 1 = 5p$$



$$ab = 5$$



$$8f + 3 = 15$$



$$\frac{2f}{9} + 8 = 2$$



$$h - 2k = 8$$



$$6m - n = 3$$



$$z = 10$$



$$\frac{8}{3} - n = 12$$



$$3(r - 5) = 7$$



$$3(4 + g) = g$$



**B Select all linear equations in one variable.**

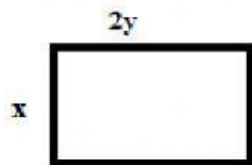
$5p + 7p = 1$	$3r^2 + r = 8$
$\frac{3}{7}n - 1 = m$	$12 - k = \frac{k}{3}$

**C Determine whether the following equations are linear equations in one variable or not.**

a	$c + 23 = 2$	YES	NO
b	$q - 8 = 31q$	YES	NO
c	$x^2y - x = 25$	YES	NO

**D Derive one linear equation for each of the following statements or situations.**

a) What is the perimeter of the diagram below. (Hint: Write in alphabetical order)



Perimeter, P = \_\_\_\_\_

b) Solve the equation for the linear equation below.

i)  $a + 3 = 10$   
 $a = 10 - 3$   
 $a = \underline{\hspace{2cm}}$

ii)  $2a + 3 = 13$   
 $2a = 13 - 3$   
 $a = (13 - 3)/2$   
 $a = \underline{\hspace{2cm}}$

iii)  $2x - 1 = 5$   
 $x = \underline{\hspace{2cm}}$

iv)  $3c + 2 = 8$

$c = \underline{\hspace{2cm}}$

v)  $5(d - 3) = 2d$

$d = \underline{\hspace{2cm}}$

vi)  $5t + 3 = 2t + 15$

$t = \underline{\hspace{2cm}}$

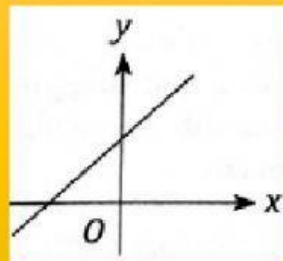
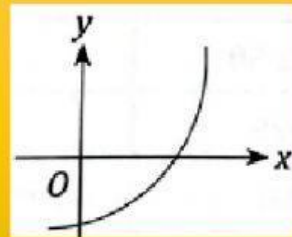
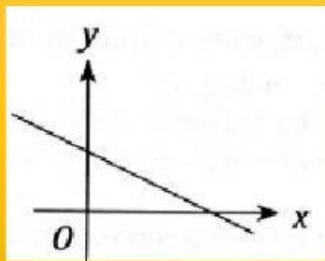
## 6.2 LINEAR EQUATIONS IN TWO VARIABLES

### NOTES




- A linear equation in two variables is a linear equation that has two variables and the power of each variable is one.

Example :  $m = 5 + n$

E Mark / on the diagram that represents the linear equation in two variables graphically and mark X if it is not.



E Mark / for linear equations in two variables mark X if not.

a	$20 - h = 4h$	
b	$3r + 23 = 11s$	
c	$16f + f = 19$	

F Match the linear equations in the two variables based on the situation below.

The number of male and female students in class 5 Murni is 35 people

$$0.8x + y = 10$$

The price of a chicken satay is 80 sen while meat satay is RM 1. Husna pays RM 10 for all the satay she buys.

$$5x + 7y = 58$$

Puan Rohaya spent RM 58 to buy 5 kg of milk melon and 7 kg of starfruit.

$$x + y = 35$$

G Solve with a graph representation.

a) The price for 2 mango and 3 guava is RM 8. The price for 3 mango seeds and one guava is RM 5.

i) Construct a simultaneous linear equation in two variables based on the above situation.

If  $x$  is the price of a mango, and  $y$  is the price of a guava.

$$\underline{\hspace{1cm}} x + \underline{\hspace{1cm}} y = 8$$

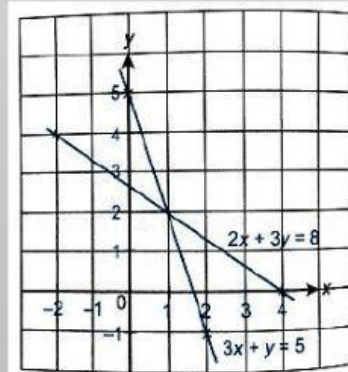
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$$\underline{\hspace{1cm}} x + \underline{\hspace{1cm}} y = 5$$

ii) Represent the following simultaneous linear equations graphically.

x	-2	4
y		

x	0	2
y		



So, the solution to the above simultaneous equation is  $(1, 2)$ .

(Write answers in coordinates. Example: (1,0))

H Solve

$$3p + q = 11 \text{ .....Equation 1}$$

$$4p - 3q = -7 \text{ .....Equation 2}$$

From .....(1)

$q = 11 - 3p$  substitute in .....(2)

$$4p - 3(\underline{\hspace{2cm}}) = -7$$

$$p = \underline{\hspace{2cm}}$$

To find the value of  $q$ , substitute in (2)

$$q = 11 - 3(\underline{\hspace{2cm}})$$

$$q = \underline{\hspace{2cm}}$$

I Solve. (Drag the appropriate answer choice)

$x = 3, y = 2$

$x = 9, y = 6$

$x = 2, y = 9$

a)  $x + y = 15.$   
 $3x - 2y = 15$



b)  $y - 2x = 5$   
 $5y + 2x = 49$



c)  $4x + y = 14$   
 $2x + 3y = 12$



J Solve. (Choose the correct answer)

a	Solve the equation $13r - \frac{3}{4} = -7r.$	$\frac{1}{65}$	$\frac{4}{35}$	$\frac{3}{80}$	$\frac{2}{75}$
b	Solve the equation $19w - 33 = \frac{2}{3}(18 + 6w).$	6	5	4	3
c	Solve the equation $\frac{x+17}{2} = 2x - 8.$	10	11	12	13
d	Given $2p + 3q = 8.$ Find the value of p if q = 2.	1	3	5	7
e	Given $3p - q = 11.$ Find the value of q if p = 5.	1	2	4	6