



# 3055 BA SANGAM COLLEGE

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## WORKSHEET 8

BA SANGAM COLLEGE

YEAR 11

SUBJECT: MATHEMATICS

NAME OF STUDENT: \_\_\_\_\_

STRAND	GRAPHS
SUB-STRAND	Solve linear equations simultaneously
Content Learning Outcome	➤ Study and illustrate graphs

**Objective :** at the end of the lesson students should be able to solve simultaneous equations using graphical method.

**Simultaneous equations** – are equations where there are two equations with two unknowns in each equation eg.  $x + y = 10$  and  $x - y = 2$ . Upon solving simultaneous equations, yields **point of intersection** – point where both equations meet/intersect/satisfy each other.

There are 3 methods of solving simultaneous equations:

1. Graphical Method
2. Elimination Method
3. Substitution Method

### Method 1 Graphical Method

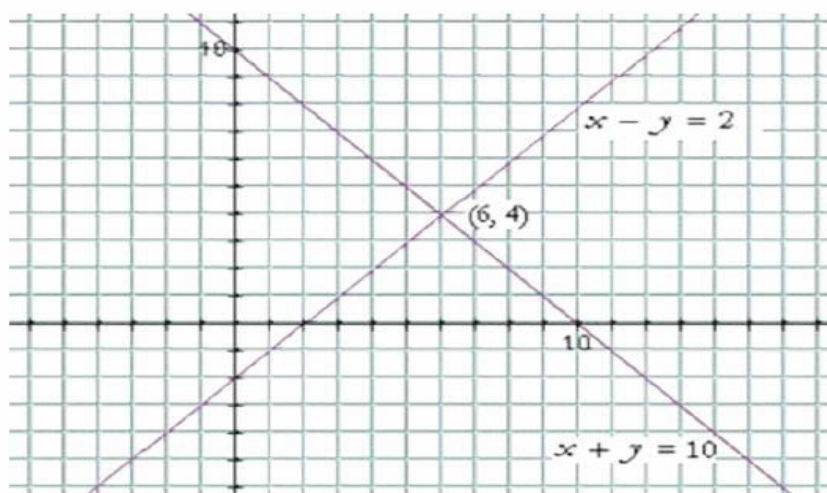
Two equations are graphed on the same pair of axis. The coordinates of the point of intersection satisfy both equations.

#### Example

Solve simultaneously for x and y:  $x + y = 10$  and  $x - y = 2$

#### Solution:

Obtain x and y intercepts of both equations and plot on the same pair of axis.



Point of intersection is (6,4)

### ACTIVITY

Use Graphical Method to Solve simultaneously for x and y:

1.  $y = x + 3$  and  $y = 2x + 1$

(2 Marks)

2.  $x + y = 15$  ,  $x - y = 3$

(2 Marks)

3.  $x + y = 0$  ,  $x - y = 2$

(2 Marks)

4.  $2x - y = 3$  ,  $4x + y = 3$

5.  $y = x + 3$  and  $y = 2x + 2$

(2 Marks)