PENANG SANGAM HIGH SCHOOL

DEPARTMENT OF MATHEMATICS/ PHYSICS

MATHEMATICS- YEAR 11



ALGEBRA

- 1. The **solution** set of $x^2 = 4$ is
 - A $\{2,4\}$
 - B. $\{-2,2\}$
 - C. $\{-2, 4\}$
 - D. $\{-4, 4\}$
- 2. 3+x+x is equal to
 - A. 5*x*
 - B. $3x^2$
 - C. 3 + 2x
 - D. $3 + x^2$
- 3. $\frac{y}{2} + \frac{3}{2} =$
 - A. $\frac{y+3}{2}$
 - B. $\frac{y+3}{4}$
 - C. $\frac{3y}{2}$
 - D. $\frac{3y}{4}$
- 4. Calculate the value of $\sum_{n=1}^{3} (3n+2)$

5. Solve
$$|x - 2| = 5$$

6. Solve
$$\frac{x-1}{3} = \frac{1-x}{4}$$

7. Solve the inequality
$$5 - 3x < 8$$

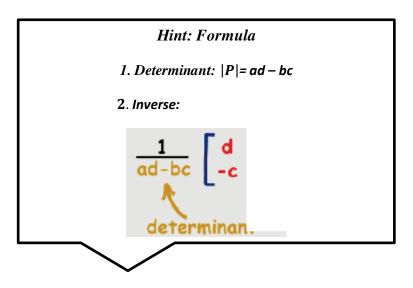
8. Expand and simplify (5x-2)-3(x-5)

Hint: Use Distributive Property .Note only like terms can be added or subtracted

9. Evaluate
$$\begin{pmatrix} 1 & 1 \\ 3 & -4 \end{pmatrix} \begin{pmatrix} 2 & -2 \\ 0 & 6 \end{pmatrix}$$

10. Matrix
$$M = \begin{pmatrix} -9 & 1 \\ -1 & -1 \end{pmatrix}$$

- (i) What is the **order** of M?
- (ii) Calculate its **determinant**.
- (iii) Find its multiplicative inverse.
- (iv) Evaluate 2M



- 11. An arithmetic sequence has 2^{nd} term = 10 and common difference = 2.
 - (i) Find the first term.
 - (ii) What is the sum of the first 20 terms?

Hint: Formula

Arithmetic Sequence

$$1. T_n = a + (n-1)d$$

2.
$$S_n = \frac{n}{2}[2a + (n-1)d]$$

- 12. A geometric sequence is given as 1, 5, 25, 125,
 - Calculate the common ratio.
 - (ii) Find the 9th term.
 - (iii) What is the sum of the first 10 terms?

Hint: Formula

Geometric Sequence

1.
$$T_n = ar^{n-1}$$

$$2. \qquad S_n = \frac{a(1-r^n)}{1-r}$$

THE END

