PENANG SANGAM HIGH SCHOOL
YEAR 11 MATHEMATICS
WEEK 3
Dates: (14/06/21) to (18/06/21)

ALGEBRA

1. The **solution** set of $x^2 = x$ is

   A $\{0\}$

   B. $\{1\}$

   C. $\{0, 1\}$

   D. $\{-1, 0\}$ **(1 mark)**

2. Which of the following is the **factorised** form of $2p^2 - 32$?

   A. $2(p-4)(p+4)$

   B. $2(p-4)(p-4)$

   C. $2(p-16)(p+16)$

   D. $(2p-32)(2p+32)$ **(1 mark)**

3. $\dfrac{y}{y-1} - \dfrac{1}{y-1} =$

   A. $\dfrac{y}{y-1}$

   B. $y-1$

   C. 1

   D. 0 **(1 mark)**

4. Calculate the value of $\sum_{n=1}^{3}(n^2 - 1)$ **(2 marks)**

5. Solve $|x - 9| = 1$ **(2 marks)**

6. Solve $5x + 9 = -4x - 27$ **(2 marks)**

7. Solve the inequality $100 - 2x > 88$ **(2 marks)**

8. Expand and simplify $(-5x - 3y) - (x - 2y)$ **(2 marks)**

9. Evaluate $\begin{pmatrix} 1 & 0 \\ 5 & -4 \end{pmatrix}\begin{pmatrix} 12 & -2 \\ 0 & 7 \end{pmatrix}$ **(2½ marks)**

10. Matrix $M = \begin{pmatrix} 2 & 0 \\ -1 & -1 \end{pmatrix}$

(i) What is the **order** of M? **(½ mark)**

(ii) Calculate its **determinant**. **(1 mark)**

(iii) Find its **multiplicative** inverse. **(2 marks)**

(iv) Evaluate 3M **(1 mark)**

11. Find the **sum** of the first 100 positive **odd numbers**. **(2 marks)**

12. Consider the sequence

$$1.25,\ -2.5,\ 5,\ -10,\ \ldots.$$

(i) Find the 11^{th} term. **(1½ marks)**

(ii) What is the **sum** of the first 15 terms? **(1½ marks)**