2021 Worksheet 2
Year 11 Applied Mathematics

Write the answers in your Exercise Book.

1. Solve

   (a) $|x - 5| = 12$ **(2 marks)**   (b) $\dfrac{x-1}{2} = \dfrac{x+7}{4}$ **(2 marks)**

   (c) $2 - x < 6$ **(2 marks)**   (d) $x^2 - 144 = 0$ **(2 marks)**

2. Expand and simplify $(x-2) - 4(x+5)$ **(2 marks)**

3. Evaluate

   (a) $\begin{pmatrix} 0 & 1 \\ 3 & -4 \end{pmatrix} + \begin{pmatrix} 2 & -1 \\ 0 & 7 \end{pmatrix}$ **(1 mark)**   (b) $\begin{pmatrix} 0 & 1 \\ 3 & -4 \end{pmatrix}\begin{pmatrix} 2 & -1 \\ 0 & 7 \end{pmatrix}$ **(2 marks)**
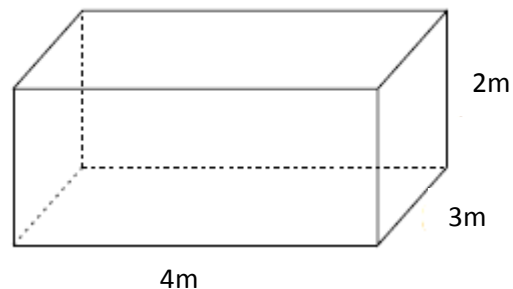
4. Matrix $M = \begin{pmatrix} 3 & 5 \\ 1 & 2 \end{pmatrix}$

   (a)   What is the **order** of M?   **(1 mark)**

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

   (c)   Evaluate 2M   **(1 mark)**

5. The water tank shown below is to be filled at a rate of $0.25m^3$ per minute. How long will it take to fill the tank?

   2m

   3m

   4m   **(2 marks)**