Are you ready for **Maths Methods TQA3**?

1. Can you find an equation for each of the following graphs?

   ![Graphs](image.png)

2(a) Can you find the equation of the line passing through (1, -6) and parallel to the line \( y = -2x + 10 \) in the form \( y = ax + b \).

2(b) Can you find the equation of the line passing through (2, -6) and perpendicular to the line \( y = -2x + 10 \) in the form \( y = ax + b \).

3. Can you convert the following quadratic into turning point form \( y = x^2 + 4x - 7 \) by completing the square?

4. Can you write the following in simplest index notation:

   \[
   81^4 \div 27^3 \div 9^2 \div 3^1 \quad 2^{n+1} \times 4^{2n+3} \div 8^{1-3n} \quad \frac{81^2 \times 27^{\frac{2}{3}}}{243^{\frac{3}{6}}}
   \]

5. Can you factorise the following
   
   \[
   x^2 - 49 \quad x^2 - 10x - 11 \quad 4xy^2 - 8x^3y
   \]

6. Can you determine how much of each type of lolly the canteen bought?
   A confectionary company sells jelly beans for $3 per kg and lolly pops for $4 per kg. The GYC canteen orders 50kg of confectionary for a total cost of $180.

7. A hospital committee of 5 is to be selected from 5 doctors and 8 nurses.
   a) What is the probability the committee consists of 3 nurses and 2 doctors?
   b) What is the probability the committee contains a majority of nurses?

8. If \( \Pr(A) = 0.76 \), \( \Pr(B) = 0.84 \) and \( \Pr(A \cup B) = 0.92 \), calculate:

   \[
   \Pr(A \cap B) \quad \Pr(A \mid B)
   \]