

WARM-UP QUESTIONS: PURE MATHS

1.

Find the coordinates of the point of intersection of the lines

$$y = 3x - 2 \quad \text{and} \quad 5x + 3y = 50$$

2.

Find the gradient of the line $2x + 5y = 17$

A line parallel to $2x + 5y = 17$ passes through the point $(0, 8)$. Find the coordinates of its point of intersection with the x-axis

3.

Solve the equation $2\cos\theta = -1$ for $0 \leq \theta \leq 2\pi$

Give your answers in the form $k\pi$

4.

The second term of a geometric progression is 18 and the fourth term is 2. The common ratio is positive. Find the sum to infinity of this progression.

5.

Differentiate $5x \ln(2 + x)$

6.

Express $3\cos\theta^\circ + 4\sin\theta^\circ$ in the form $R\cos(\theta - \alpha)^\circ$, where $R > 0$ and $0 < \alpha < 90$