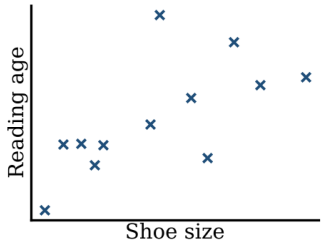
Day 321 **A Level Maths: C Tier 10-a-day**

1 The scatter diagram shows shoe size and reading age for a group.
Describe the correlation.



2 Sketch $y = 2(x - 1)(x - 4)(x - 5)$. Write down the coordinates of the points where the curve meets the axes.

3 Solve $\sin x = \frac{\sqrt{3}}{2}$ for $0° \leq x \leq 180°$.

4 A boat moves with constant velocity $(-4\mathbf{i} + 3\mathbf{j})$ m s^{-1}.
At time t = 0 its position vector is $(6\mathbf{i} + \mathbf{j})$ m.
(a) Find its position vector when t = 3.
(b) Find the distance it travels in 3 s.

5 Solve $|x + 4| < 2$.

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6 Car P passes a point O at constant speed 9 m s^{-1}. At that instant car Q starts from rest at O with constant acceleration 2 m s^{-2} in the same direction. Find the time when Q catches up P.	
7 Use proof by exhaustion to show that $n^2 + n + 4$ is divisible by 2 for every integer n with $1 \leq n \leq 5$.	
8 A line has equation $\mathbf{r} = \begin{pmatrix}2\\3\\1\end{pmatrix} + t\begin{pmatrix}1\\2\\3\end{pmatrix}$. Write down a vector equation of the line through the origin, parallel to this line.	
9 A and B are mutually exclusive, with P(A) = 0.2 and P(B) = 0.15. (a) Find $P(A \cup B)$. (b) Find the probability that neither A nor B happens.	
10 A sector has radius 5 cm and area 20.0 cm^2. Find the angle of the sector in radians and the arc length.	