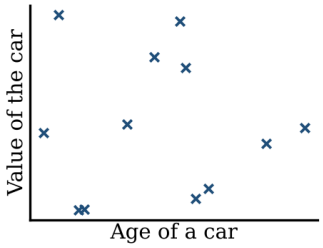
Day 73 **A Level Maths: C Tier 10-a-day**

1 The scatter diagram shows age of a car and value of the car for a group.
Describe the correlation.



2 A car is worth £$V = 20000 \times 0.75^t$ after t years.
Find (a) its value after 5 years, (b) when it is worth £10000.
Give answers to 3 s.f.

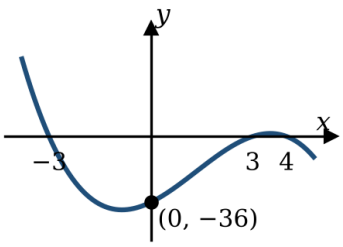
3 A circle has equation $(x + 3)^2 + (y - 4)^2 = 49$.
Determine whether the point P(8, 2) is inside, outside or on the circle.

4 Given that $\log_3 x = p$, write the following in terms of p:
(a) $\log_3 x^3$ (b) $\log_3 (9x)$

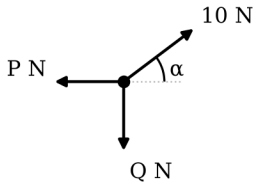
5 Car A passes a point O at constant speed 16 m s^{-1}.
At that instant car B starts from rest at O with constant acceleration 4 m s^{-2} in the same direction. Find the time when B catches up A.

Day 73 **A Level Maths: C Tier 10-a-day**

6 The diagram shows the curve y = f(x), where f(x) is a cubic. Find f(x) in the form k(x − a)(x − b)(x − c).



7 A particle is in equilibrium under the three forces shown. cos α = $\frac{4}{5}$. Find P and Q.



8 Express $\frac{x - 2}{(x + 1)(x + 2)}$ in the form $\frac{A}{x + 1} + \frac{B}{x + 2}$. Find the values of A and B.

9 (x + 3) is a factor of $x^3 + kx^2 - 3x - 27$. Find the value of k.

10 20 pairs of data on height and arm span have r = −0.29. Test, at the 5% significance level, for evidence of negative correlation. The critical value is −0.3783.