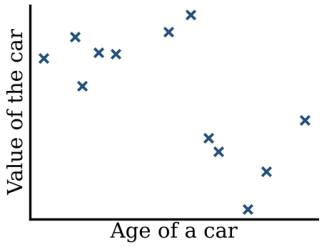
Day 56	A Level Maths: C Tier 10-a-day
1 $f(x) = 5x + 4$ and $g(x) = x^2 + 2$. Find (a) $fg(x)$, (b) $gf(x)$.	
2 The scatter diagram shows age of a car and value of the car for a group. Describe the correlation. 	
3 Find the equation of the tangent to the curve $y = 6\sqrt{x} - x$ at the point where $x = 4$.	
4 A car moving in a straight line has initial speed 11 m s^{-1} and constant acceleration 2 m s^{-2}. Find its speed after 12 s.	
5 The product of x and $(48 - x^2)$ is $P = 48x - x^3$, $x > 0$. Find the maximum value of P.	

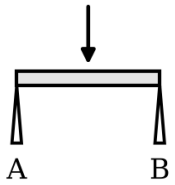
Day 56	A Level Maths: C Tier 10-a-day

6 Find the sum of the first 9 terms of the geometric series $4 + 12 + 36 + ...$

7 $X \sim B(25, p)$. H_0: $p = 0.1$, H_1: $p \neq 0.1$. In a sample, $x = 6$.
Test at the 5% significance level.

8 $\frac{5x + 13}{(x + 1)(x + 3)} \equiv \frac{A}{x + 1} + \frac{B}{x + 3}$.
Find A and B, and hence find $\int \frac{5x + 13}{(x + 1)(x + 3)}\, dx$.

9 A uniform beam AB of mass 30 kg and length 2 m rests horizontally on supports at A and B. A load of mass 20 kg is placed on the beam 1 m from A. Take $g = 9.8$ m s^{-2}. Find the reaction at B.



10 Evaluate $\sum_{k=1}^{5} 2^{k-1}$.