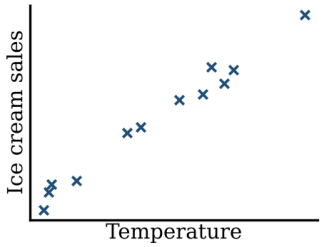
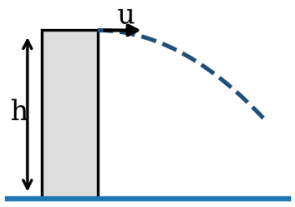
Day 190 **A Level Maths: C Tier 10-a-day**

1 The scatter diagram shows temperature and ice cream sales for a group.
Describe the correlation.



2 A ball is thrown horizontally at 4 m s^{-1} from the top of a vertical cliff of height 44.1 m above the sea. Take g = 9.8 m s^{-2}. Find (a) the time taken to reach the sea, (b) the horizontal distance of the landing point from the cliff.



3 X ~ N(150, 5^2). Find P(X > 142.5), giving your answer to 3 s.f.

4 A particle of mass 2 kg slides from rest down a smooth plane inclined at angle α to the horizontal, where $\sin\alpha = \frac{4}{5}$. Take g = 9.8 m s^{-2}.
Find (a) its acceleration, (b) its speed after 2 s.

5 The equation $3x^2 + 6x + c = 0$ has equal roots.
Find the value of c.

Day 190	A Level Maths: C Tier 10-a-day
6 Write down the exact value of cos 330°.	
7 Find the set of values of x satisfying both $3x - 4 > -13$ and $x^2 - x - 20 < 0$.	
8 $\frac{4x + 10}{(x + 3)(x + 2)} \equiv \frac{A}{x + 3} + \frac{B}{x + 2}$. Find A and B, and hence find $\int \frac{4x + 10}{(x + 3)(x + 2)}\, dx$.	
9 Expand and simplify $(4 + \sqrt{3})(4 - \sqrt{3})$.	
10 Given that $dy/dx = 20x^3$ and $y = 0$ when $x = 0$, find y in terms of x.	