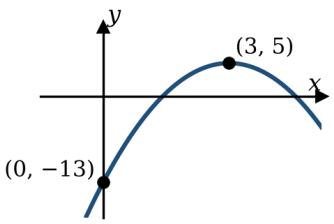
Day 150	A Level Maths: C Tier 10-a-day

1 A lorry moving in a straight line with constant acceleration increases its speed from 8 m s^{-1} to 19 m s^{-1} in 14 s.
Find the distance it travels in this time.

2 The diagram shows a sketch of a quadratic curve.
Find its equation in the form $y = a(x - p)^2 + q$.



3 Solve $2^{x+2} = 500$.
Give your answer to 3 significant figures.

4 $X \sim N(105, 3^2)$ and $P(105 < X < 109.5) = 0.025$.
Find $P(X > 109.5)$.

5 $f(x) = \sqrt{x - 1} + 1$.
State the largest possible domain and the range of f.

Day 150	A Level Maths: C Tier 10-a-day
6 Two forces of magnitudes 6 N and 8 N act on a particle at right angles to each other. Find (a) the magnitude of the resultant, (b) the angle it makes with the 6 N force, to 1 d.p.	
7 Solve the simultaneous equations: $y = x^2 - 3x - 19$, $y = -x - 4$.	
8 The curve $y = 8x - x^2$ and the line $y = 3x$ meet at the origin and at P. Find the area enclosed between them.	
9 $X \sim B(80, 0.6)$. Use a normal approximation to find $P(X \leq 52)$, to 3 s.f.	
10 $f(x) = x^2 - \ln x - 3$. Show that $f(x) = 0$ has a root between $x = 1$ and $x = 2$.	