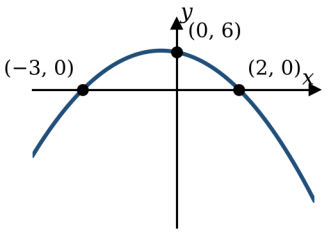
Day 18	IGCSE 10-a-day
1 ABCD is a parallelogram. A = (4, 3), B = (0, 0) and C = (5, −4). Find the coordinates of D.	
2 $y = -2x^3 - 5x^2 + 5x - 4$ The curve crosses the y-axis at the point A. Work out the coordinates of A and the gradient of the curve at A.	
3 $\mathbf{v} = \begin{pmatrix} k \\ 8 \end{pmatrix}$ and $\lvert\mathbf{v}\rvert = 17$. Find the two possible values of k.	
4 A curve has equation $y = x^3 + 3x^2 + 8x$. (a) Show that the curve has no stationary points. (b) Find the least value of the gradient of the curve.	
5 A price is decreased by 36%. By what percentage must the new value be increased to get back to the original value?	

Day 18 **IGCSE 10-a-day**

6 The diagram shows a sketch of a quadratic curve. It crosses the axes at the points shown.
Find an equation of the curve.
Give your answer in the form $y = ax^2 + bx + c$.



7 Anna can paint a fence in 12 hours.
Ben can paint the same fence in 60 hours.
They work together at these rates.
How long do they take to paint the fence?

8 The tangent at the point P on the curve $y = 2x^2 + x - 8$ is perpendicular to the line $x + 9y = 2$.
Find the coordinates of P.

9 Given that $x > 0$, solve $x^{-\frac{5}{3}} = \frac{1}{32}$

10 ABC is a right-angled triangle with sides $(x - 3)$ cm, $(2x + 4)$ cm and $(2x + 5)$ cm. The longest side is $(2x + 5)$ cm.
(a) Find the value of x.
(b) Work out the area of the triangle.
The diagram is not drawn accurately.

