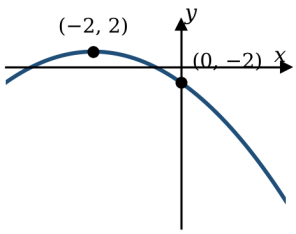
Day 62	IGCSE 10-a-day
1 $y = -2x^4 - 3x^3 + 6x^2 - 5x - 9$ The curve crosses the y-axis at the point A. Work out the coordinates of A and the gradient of the curve at A.	
2 The mean of 5 numbers is 57. One number is removed and the mean of the remaining 4 numbers is 56.5. Work out the number that was removed.	
3 A sector of a circle has angle 135° and area 6π cm^2. (a) Work out the radius of the circle. (b) Work out the length of the arc of the sector. Give your answer to (b) in terms of π.	
4 $f(x) = -5x - 6$. (a) Find $f^{-1}(x)$. (b) Find $f^{-1}(-5)$.	
5 $y = x(x - 1)(2x + 1)$ Work out the gradient of the curve at the point where $x = 2$.	

Day 62	IGCSE 10-a-day

6 The diagram shows a sketch of a quadratic curve with a turning point at $(-2, 2)$.
The curve crosses the y-axis at $(0, -2)$.
Find an equation of the curve.
Give your answer in the form $y = ax^2 + bx + c$.



7 £4,000 is invested at 10% per year compound interest.
Work out the least whole number of years after which the investment is worth more than £7,000. (Calculator)

8 Show that the equation $x^2 + 2kx - 2 = 0$ has two distinct real solutions for all values of k.

9 Given that $x > 0$, solve $x^{\frac{5}{3}} = 243$

10 The diagram shows the graph of $s = -t^3 + 12t^2 - 45t$, the displacement in metres of a particle P from O after t seconds.
P changes direction at A and B. Work out the total distance travelled in the first 7 seconds.

