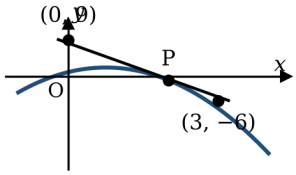
Day 320	IGCSE 10-a-day
1 Solve the simultaneous equations $y = x^2 - 4x - 1$ $y = -8x - 1$	
2 ABC is an isosceles triangle with AB = AC. Angle BAC = $(5x - 5)°$ Angle ABC = $(3x - 23)°$ (a) Work out the value of x. (b) Work out the size of angle BAC.	
3 There are 39 students. 13 of them study French and 15 of them study Spanish. 20 of them do neither. (a) Work out how many do both. (b) One of the students is chosen at random. Find the probability that they only study French.	
4 The diagram shows part of the curve $y = -2x^2 + 3x + 1$. The line shown is the tangent to the curve at the point P. (Not drawn accurately.) (a) Use the two marked points on the tangent to work out its gradient. (b) Use differentiation to find the x coordinate of P. 	
5 Zane, Beth and Uma share some money. Zane : Beth = 4 : 2 Beth : Uma = 6 : 3 (a) Work out the ratio Zane : Beth : Uma. (b) They share £63 altogether. How much money does Uma get?	

Day 320	IGCSE 10-a-day
6 Work out $(3.3 \times 10^{-2})^3$ Give your answer in standard form.	
7 The graph of y = f(x) has a maximum point at (−5, −9). Write down the coordinates and the type of turning point on each graph. (a) y = −f(x) (b) y = f(x − 1)	
8 A curve has equation $y = ax^2 + \frac{b}{x}$, where a and b are constants. The point (1, −7) lies on the curve and the gradient of the curve at this point is −2. Find the values of a and b.	
9 A bag contains some counters. 4 of them are green and the rest are white. Two counters are taken at random without replacement. The probability that both are green is $\frac{1}{11}$. Work out how many counters are white.	
10 The normal to the curve $y = x^2 + 3x + 4$ at the point where x = −2 meets the x-axis at N. Find the coordinates of N.	