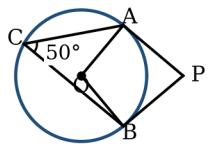
Day 112	IGCSE 10-a-day
1 A curve has equation $y = 2x^2 + 5x + 7$. The gradient at the point P on the curve is 5. Find the coordinates of P.	
2 $A = \begin{pmatrix} 1 & 7 \\ 6 & -5 \end{pmatrix}$ and $B = \begin{pmatrix} -6 & -3 \\ -5 & -3 \end{pmatrix}$. (a) Work out A + B. (b) Work out 4A − 3B.	
3 $y = 3x^3 + 2x^2 - 5x - 3$ The curve crosses the y-axis at the point A. Work out the coordinates of A and the gradient of the curve at A.	
4 PA and PB are tangents to a circle, centre O. C is a point on the circle. Angle ACB = 50°. (a) Work out the size of angle AOB. (b) Work out the size of angle APB. The diagram is not drawn accurately. 	
5 Work out $1\frac{1}{4} \times 1\frac{1}{2} - 1\frac{1}{3}$ Give your answer as a mixed number or a fraction in its simplest form.	

Day 112	IGCSE 10-a-day
6 $y = \sqrt{x}(x + 1)$ Find $\frac{dy}{dx}$. Give each term of your answer in the form ax^n.	
7 Hassan and Oscar share some money in the ratio 6 : 5. Hassan gives Oscar £14. The ratio of their money is now 8 : 9. How much money do they have altogether?	
8 A population is decreased by x% in one year and then decreased by a further x% the next year. Over the two years the population decreases by 51%. Work out the value of x.	
9 Solve $\frac{6}{x-1} + \frac{2}{x-4} = 1$	
10 A rectangle has area 36 cm^2, correct to 2 significant figures. Its length is 5.900000000000000355271367880050092935562133789062 5 cm, correct to 2 significant figures. Work out the upper bound of the width of the rectangle. Give your answer correct to 3 significant figures. (Calculator)	