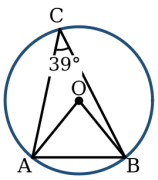
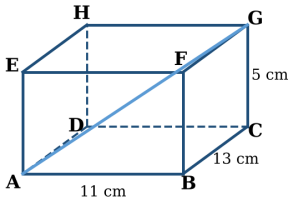
Day 2	IGCSE 10-a-day
1 Differentiate $-6x^3 - \frac{8}{x^2}$ with respect to x.	
2 f(x) = 5x + 6 and g(x) = $2x^2$ + 5. Work out ff(−2) + gf(2).	
3 A rectangular enclosure is x metres wide and y metres long. It is fenced all round and divided into three equal parts by two fences each of length x metres, parallel to the width. The total length of fencing used is 16 m. (a) Show that the area of the enclosure is A = $-2x^2$ + 8x. (b) Find the maximum possible area, justifying that it is a maximum.	
4 Here are five numbers: x − 1, 4, 3, 2x + 6, 3x + 6. The mean of the five numbers is 12. (a) Work out the value of x. (b) Work out the range of the five numbers.	
5 A, B and C are points on a circle, centre O. Angle ACB = 39°. (a) Work out the size of angle AOB. (b) Work out the size of angle OAB. The diagram is not drawn accurately. 	

Day 2	IGCSE 10-a-day
6 The curve $y = 2x^2 + 4x + 5$ and the line $y = 10x + 5$ intersect at two points A and B, where A has the smaller x coordinate. (a) Find the coordinates of A and B. (b) Find the gradient of the curve at A and at B.	
7 ABCDEFGH is a cuboid. AB = 11 cm, BC = 13 cm and CG = 5 cm. (a) Work out the length of AC. (b) Work out the size of the angle between AG and the base ABCD. Give answers to 3 significant figures or 1 decimal place. (Calculator) 	
8 A is the point $(-4, 0)$ and B is the point $(-8, 6)$. Find an equation of the perpendicular bisector of AB. Give your answer in the form $ax + by = c$, where a, b and c are integers.	
9 The mean of the marks in a test for the men is 77. The mean of the marks in a test for the women is 73. The mean for all of the men and women together is 74.2. Work out the ratio of the number of men to the number of women.	
10 Simplify $\frac{1}{4+\sqrt{10}} + \frac{1}{4-\sqrt{10}}$ Give your answer with a rational denominator.	