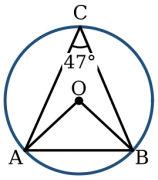
Day 49	IGCSE 10-a-day
1 A farm grows x hectares of wheat and y hectares of barley. Each hectare of wheat needs 1 hour of labour and 6 kg of seed. Each hectare of barley needs 3 hours of labour and 3 kg of seed. There are 36 hours of labour and 66 kg of seed available. The profit is £5 for each hectare of wheat and £8 for each hectare of barley. (a) Write down two inequalities, other than $x \geq 0$, $y \geq 0$. (b) Find the greatest profit.	
2 $y = (x + 6)(x + 3)$ Find $\frac{dy}{dx}$.	
3 A, B and C are points on a circle, centre O. Angle ACB = 47°. (a) Work out the size of angle AOB. (b) Work out the size of angle OAB. The diagram is not drawn accurately. 	
4 A = (−2, 3), B = (6, −2), C = (−2, 2) and D = (k, −8). **AB** is parallel to **CD**. Find the value of k.	
5 Solve $3^{4x-1} = 27^{2x+5}$	

Day 49	IGCSE 10-a-day
6 Zane and Leila share some money in the ratio 4 : 5. Zane gives Leila £2. The ratio of their money is now 1 : 2. How much money do they have altogether?	
7 A curve has equation $y = -2x^3 - 15x^2 - 36x - 8$. The point A (2, k) lies on the curve. Work out the value of k and the gradient of the curve at A.	
8 The price of a watch is increased by 15%. Later the new price is reduced by 20% in a sale. The sale price is £469.20. Work out the price before the increase. (Calculator)	
9 The line $y = -2x + k$ is a tangent to the curve $y = 2x^2 - 5x - 3$. Find the value of k.	
10 The curve C has equation $y = 2x^2 + 3x + 1$. The points A and B on C have x coordinates -3 and 0. The tangents to C at A and at B meet at the point T. Find the coordinates of T.	