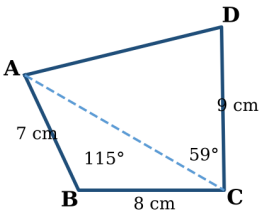
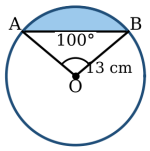
Day 242	IGCSE 10-a-day
1 Factorise fully $(x + 5)^2 - 36$	
2 The graph of $y = -x^2 - 8x - 7$ has a turning point at P. Find the equation of the tangent to the curve at P.	
3 In quadrilateral ABCD, AB = 7 cm, BC = 8 cm, CD = 9 cm, angle ABC = 115° and angle ACD = 59°. Work out the area of ABCD. Give your answer correct to 3 significant figures. (Calculator)  	
4 A drug in the blood has a mass of 2000 mg. Its mass halves every 5 hours. (a) Work out the mass after 20 hours. (b) After how many hours will the mass first be less than 40 mg?	
5 A curve has equation $y = -x - \frac{12}{x}$. Find the coordinates of the points on the curve where the gradient is 2.	

Day 242 **IGCSE 10-a-day**

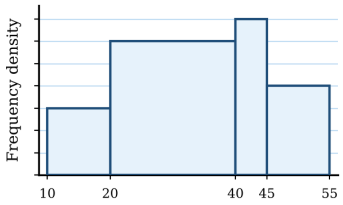
6 Given that $\frac{5^3 \times 25^3}{25^2} = 5^n$,
find the value of n.

7 The circle has centre O and radius 13 cm. A and B are points on the circle and angle AOB = 100°. (Calculator)
Work out the area of the shaded segment. Give your answer correct to 3 significant figures.
The diagram is not drawn accurately.



8 Rationalise the denominator of $\frac{26}{2\sqrt{7}}$
Give your answer in its simplest form.

9 The histogram shows the ages, in years, of some visitors.
The bar for 45 to 55 represents 16 visitors.
Estimate the number of visitors with a value greater than 25.



10 A tank is a cuboid with a square base of side x metres and height h metres, and has an open top. Its volume is 256 m^3.
(a) Show that the total outside surface area, A m^2, is $A = x^2 + \frac{1024}{x}$.
(b) Find the minimum possible value of A, showing that it is a minimum.