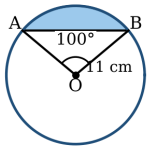
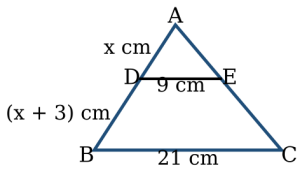
Day 273	S Tier 10-a-day
1 The graph of y = f(x) has a maximum point at (3, 1). Write down the coordinates of the turning point of the graph of (a) y = f(x + 3) (b) y = f(x − 2) + 1	
2 Solve $8^x = 16^3$	
3 The circle has centre O and radius 11 cm. A and B are points on the circle and angle AOB = 100°. (Calculator) Work out the area of the shaded segment. Give your answer correct to 3 significant figures. The diagram is not drawn accurately. 	
4 Solve the simultaneous equations 5x + 6y = −34 6x − 4y = 4	
5 Amir invests £1,000 for 4 years at 4.5% per year compound interest. Work out the value of the investment at the end of the 4 years. Give your answer to the nearest penny. (Calculator)	

Day 273 **S Tier 10-a-day**

6 Write $\frac{16^{n+1} \times 4^{n-3}}{2^n}$ in the form 2^{an+c}
where a and c are integers.

7 In the diagram, DE is parallel to BC.
AD = x cm, DB = (x + 3) cm, DE = 9 cm and BC = 21 cm.
(a) Find the value of x.
(b) Work out the length of AB.
The diagram is not drawn accurately.



8 A runner covers a distance of 200 m, correct to 1 significant figure.
The race takes 11 s, correct to 2 significant figures.
Work out the lower bound of the speed.
Give your answer correct to 3 significant figures. (Calculator)

9 The nth term of a sequence is $2n^2 + 6n - 8$.
(a) Work out the 10th term.
(b) Is 411 a term of the sequence? You must show your working.

10 Leila and Carlos share some money in the ratio 5 : 2.
Leila gives Carlos £39.
The ratio of their money is now 2 : 5.
How much money do they have altogether?