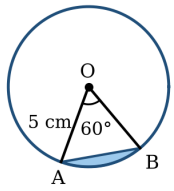
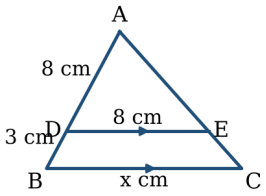
Day 257	A Tier 10-a-day
1 The scale of a map is 1 : 20000. Two towns are 4 cm apart on the map. Work out the real distance between the towns in kilometres.	
2 Write 200 as a product of its prime factors. Give your answer in index form.	
3 The population of a village is increased by 10%. The new population is then decreased by 15%. Work out the overall percentage change.	
4 The diagram shows a circle with centre O and radius 5 cm. Angle AOB = 60°. (Calculator) Work out the area of the shaded segment. Give your answer to 3 significant figures. 	
5 Work out $(4 \times 10^6)^2$ Give your answer in standard form.	

Day 257 **A Tier 10-a-day**

6 In triangle ABC, DE is parallel to BC.
D is on AB and E is on AC.
Work out the value of x.
The diagram is not drawn accurately.



7 Here is some information about 20 people.
(a) Work out the mean.
(b) Write down the mode.

Books read	1	2	3	4	5
Frequency	5	6	5	1	3

8 Expand and simplify
$(x + 2)(x - 1)(x + 3)$

9 A is the point (3, 3) and B is the point (1, −1).
Find the equation of the perpendicular bisector of AB.

10 A sector of a circle has angle 270° at the centre and arc length 24π cm.
Work out the radius of the sector.