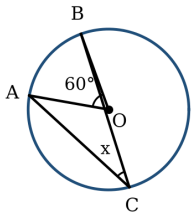
Day 32	A Tier 10-a-day
1 Work out $5\frac{3}{5} \times 4\frac{1}{2}$ Give your answer as a mixed number in its simplest form.	
2 The scale of a map is 1 : 200000. Two towns are 1.5 cm apart on the map. Work out the real distance between the towns in kilometres.	
3 A, B and C are points on a circle with centre O. Angle AOB = 60°. Work out the size of angle x. Give a reason for your answer. 	
4 $\frac{5}{8}$ of the students in a school are in Year 11. There are 40 students in Year 11. How many students are in the school?	
5 A cone has base radius 2 cm and perpendicular height 9 cm. Work out the volume of the cone. Give your answer in terms of π.	

Day 32 **A Tier 10-a-day**

6 Simplify fully

$$\frac{x^2 - 13x + 42}{x^2 - 11x + 28}$$

7 A tower stands on horizontal ground.
(Calculator)
From a point 90 m from the base of the tower, the angle of elevation of the top is 41°.
Work out the height of the tower. Give your answer to 3 significant figures.

8 A scientist wants to estimate the number of deer in a forest.
She catches 80 deer, marks each one and returns them.
Later she catches a second sample of 30 deer.
10 of these are marked.
Work out an estimate for the total number of deer in a forest.

9 $f(x) = 3x + 6$
$g(x) = x^2 - 5$
Solve $gf(x) = 4$

10 The histogram shows information about the length of some items.
(a) Work out the number of items with a length in the class 0 to 20 mm.
(b) Work out an estimate for the number with a length greater than 25 mm.

