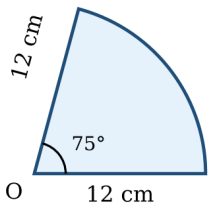
Day 1	A Tier 10-a-day
1 Expand and simplify $(2x + 3)(x - 4)$	
2 Work out (a) $27^{\frac{2}{3}}$ (b) $16^{\frac{-3}{4}}$ Give each answer as an integer or a fraction.	
3 The diagram shows a sector of a circle of radius 12 cm. The angle of the sector is 75°. Work out the area of the sector. Give your answer in terms of π. 	
4 A bag contains 5 red counters and 3 blue counters. Two counters are taken at random, without replacement. Work out the probability that the two counters are the same colour.	
5 Solve $2x^2 + 5x - 3 = 0$	

Day 1 **A Tier 10-a-day**

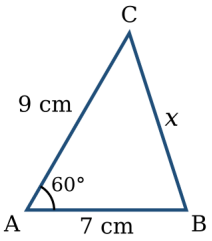
6 The table shows the times taken by 30 students to complete a puzzle.
Work out an estimate for the mean time.

Time, t (minutes)	Frequency
$0 < t \leq 10$	4
$10 < t \leq 20$	9
$20 < t \leq 30$	12
$30 < t \leq 40$	5

7 y is inversely proportional to x^2.
When x = 4, y = 5.
Find the value of y when x = 2.

8 Write the recurring decimal 0.272727... as a fraction in its simplest form.

9 Work out the length BC.
Give your answer as a surd.
The diagram is not drawn accurately.



10 Make x the subject of the formula

$$y = \frac{(3x + 1)}{(x - 2)}$$