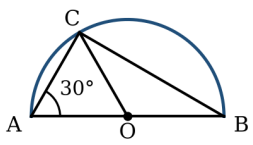
Day 89 **S Tier 10-a-day**

1 The table shows the number of members in each of four groups.
(a) A stratified sample of 27 is taken. Work out how many come from Group A.
(b) A different stratified sample has 18 from Group B. Work out the size of this sample.

	Group A	Group B	Group C	Group D
Number	300	150	125	100

2 AB is a diameter of a circle, centre O. C is a point on the circle. Angle BAC = 30°.
(a) Work out the size of angle ACB.
(b) Work out the size of angle COB.
The diagram is not drawn accurately.



3 The capacity of a tank is 89 litres, correct to the nearest whole number.
Write down the error interval for the capacity of a tank, using c.

4 Solve $\frac{x+5}{3} + \frac{x+2}{8} = 1$

5 A bus travels the first half of a journey at 20 km/h.
It travels the second half of the same journey at 60 km/h.
Work out the average speed for the whole journey.

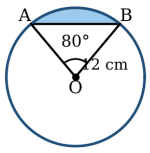
Day 89	S Tier 10-a-day

6 Simplify fully $\dfrac{4x^{\frac{4}{3}} \times 4x^{\frac{1}{2}}}{2x^{\frac{1}{4}}}$

7 The graph of y = f(x) has a minimum point at (−3, −1).
Write down the coordinates of the turning point of the graph of
(a) y = f(x) + 3
(b) y = 3f(x + 2)

8 A rectangle has area $(13 + 2\sqrt{2})$ cm^2 and length $(3 + \sqrt{2})$ cm.
Find the width of the rectangle.
Give your answer in the form $a + b\sqrt{2}$

9 The circle has centre O and radius 12 cm. A and B are points on the circle and angle AOB = 80°. (Calculator)
Work out the area of the shaded segment. Give your answer correct to 3 significant figures.
The diagram is not drawn accurately.



10 The 2nd term of a geometric sequence is 96.
The 4th term of the sequence is 864.
All the terms of the sequence are positive.
(a) Work out the common ratio.
(b) Work out the first term.