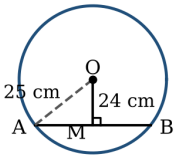
Day 14	S Tier 10-a-day

1 AB is a chord of a circle, centre O. M is the midpoint of AB. (Calculator)
(a) Work out the length of the chord AB.
(b) Work out angle AOB, to 1 decimal place.
The diagram is not drawn accurately.



2 Solve $\frac{6}{x+4} + \frac{5}{x+1} = \frac{2}{3}$

3 Work out the exact value of $(\tan 45°)^2 + \tan 30°$
Give your answer in its simplest form, as a fraction or surd. Do not use a calculator.

4 Work out $(2.8 \times 10^{-2}) - (6.5 \times 10^{-4})$
Give your answer in standard form.

5 A and B are points on the curve $y = x^3 - x$.
The x coordinate of A is 2 and the x coordinate of B is 4.
Work out the gradient of the line AB.

Day 14	S Tier 10-a-day
6 A bag contains 2 orange beads and 5 purple beads. Two beads are taken at random without replacement. Work out the probability that (a) they are different colours, (b) at least one is orange.	
7 Given that $\sqrt{175} - \sqrt{28} = \sqrt{n}$, find the value of n.	
8 Solve the simultaneous equations $-x - 4y = 21$ $-3x + 4y = -33$	
9 Find the smallest positive integer k such that $756 \times k$ is a square number.	
10 A spinner numbered 1 to 4 and a spinner numbered 1 to 5 are each thrown once. The first score and the second score are recorded. (a) Work out the probability that the sum is a multiple of 3. (b) Given that the sum is odd, work out the probability that the sum is a multiple of 3.	