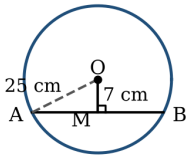
Day 294 **S Tier 10-a-day**

1 A flight leaves London at 18:30 (London time).
It takes 7 hours 10 minutes.
When it is 12:00 in London it is 14:00 in Cairo.
At what time, in Cairo time, does the flight land? Say if it is on a different day.

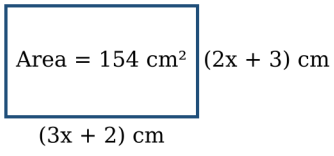
2 AB is a chord of a circle, centre O. M is the midpoint of AB. (Calculator)
(a) Work out the length of the chord AB.
(b) Work out angle AOB, to 1 decimal place.
The diagram is not drawn accurately.

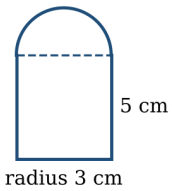


3 (a) Write 784 and 700 as products of prime factors.
(b) Find the HCF and the LCM of 784 and 700.
Give your answers as numbers.

4 Maya drives 60 km at an average speed of 40 km/h.
The drive then continues for another 30 km at an average speed of 60 km/h.
Work out the average speed for the whole journey.

5 The diagram shows a rectangle of length (3x + 2) cm, width (2x + 3) cm and area 154 cm^2.
(a) Show that $6x^2 + 13x - 148 = 0$.
(b) Work out the perimeter of the rectangle.



Day 294	S Tier 10-a-day
6 A biased four-sided dice lands on one of four outcomes with these probabilities. 1: x; 2: 3x + 0.2; 3: 2x + 0.1; 4: 0.1 (a) Work out the value of x. (b) The biased four-sided dice is used 120 times. Work out an estimate for the number of times it lands on 1.	
7 A and B are the points (−2, 1) and (−8, 11). AB is a diameter of a circle. Find an equation of the circle.	
8 The nth term of a sequence is $2n^2 + 3$. (a) Work out the 7th term. (b) Is 397 a term of the sequence? You must show your working.	
9 A solid is made from a cylinder of height 5 cm and a hemisphere. Both have radius 3 cm. Work out the total volume of the solid. Give your answer in terms of π.  	
10 A bag contains some counters. 6 of them are green and the rest are white. Two counters are taken at random without replacement. The probability that both are green is $\frac{5}{12}$. Work out how many counters are white.	