Day 333	B Tier 10-a-day
1 Here are four digit cards. 4 5 9 7 Use all four cards to make the largest possible number. Work out the difference between the largest and smallest possible numbers.	
2 A hotel menu has 2 starters, 5 main courses and 4 desserts. A customer chooses one starter, one main course and one dessert. How many different meals are possible?	
3 Here is a number machine. Input → − 4 → + 2 → Output (a) The input is 10. Work out the output. (b) The output is 8. Work out the input.	
4 (a) The point P(6, 1) is enlarged with scale factor −2 and centre the origin. Write down the coordinates of the image. (b) The point P(6, 1) is rotated 90° clockwise about the origin. Write down the coordinates of the image.	
5 Two lights flash at 10:00. One light flashes every 9 minutes. The other light flashes every 24 minutes. At what time do both lights next flash together?	

Day 333 **B Tier 10-a-day**

6 (a) Convert 12.5 litres to ml.
(b) Convert 2.5 litres to cm^3.

7 The table shows the lengths of some leaves.
(a) Write down the modal class.
(b) Work out an estimate for the mean.

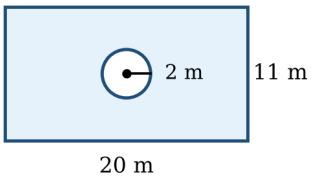
Length, l (cm)	Frequency
$10 < l \leq 30$	6
$30 < l \leq 50$	8
$50 < l \leq 70$	8
$70 < l \leq 90$	7
$90 < l \leq 110$	11

8 Here is an iteration formula.

$$x_{n+1} = 3 + \frac{10}{x_n}$$

$x_0 = 2$
(a) Work out x_1
(b) Work out x_2. Give your answer correct to 3 decimal places. (Calculator)

9 The diagram shows a rectangle 20 m by 11 m with a circle of radius 2 m cut out.
The circle is in the centre of the rectangle.
Work out the area of the shaded region.
Give your answer in terms of π.
The diagram is not drawn accurately.



10 A lorry travels at 40 km/h for 2 hours and then at 72 km/h for 2 hours.
Work out its average speed for the whole journey.