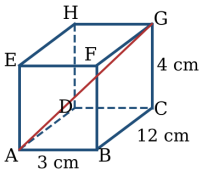
Day 68	S Tier 10-a-day

1 Work out the value of $abc - a^2$
when $a = 4$, $b = -2$ and $c = -1$.

2 A tank is $\frac{2}{5}$ full.
16 more litres of water are added and the tank is then $\frac{2}{3}$ full.
Work out the capacity of the tank.

3 The diagram shows a cuboid ABCDEFGH.
(Calculator)
(a) Work out the length of the diagonal AG.
(b) Work out the angle between AG and the base ABCD, to 1 decimal place.
The diagram is not drawn accurately.



4 The mean of 5 numbers is 20.
One number is removed and the mean of the remaining 4 numbers is 17.5.
Work out the number that was removed.

5 P is 5% less than A.
A is 80% less than R.
Work out P as a percentage of R.

Day 68	S Tier 10-a-day
6 A point A is on level ground in line with the base of a tower. (Calculator) The angle of elevation of the top of the tower from A is 45°. B is a point on the same line, 25 m further from the tower than A. The angle of elevation of the top of the tower from B is 25°. Work out the height of the tower. Give your answer to 1 decimal place.	
7 Solve $\frac{4}{x-5} - \frac{2}{x-2} = 1$	
8 A is the point $(-2, 4)$ and B is the point $(-6, 6)$. Find an equation of the perpendicular bisector of AB. Give your answer in the form $y = mx + c$.	
9 ABCD is a rectangle with AB = 8 cm and AD = 10 cm. A point P inside the rectangle is such that AP $\leq$ 8 cm and P is nearer to A than to B. Work out the area of the region in which P can lie. Give your answer in terms of π and surds.	
10 The mean of the marks in a test for the men is 76. The mean of the marks in a test for the women is 59. The mean for all of the men and women together is 70.9. Work out the ratio of the number of men to the number of women.	