Day 130 **S Tier 10-a-day**

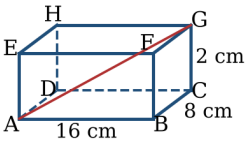
1 The table shows the number of members in each of four groups.
(a) A stratified sample of 26 is taken. Work out how many come from Group D.
(b) A different stratified sample has 9 from Group A. Work out the size of this sample.

	Group A	Group B	Group C	Group D
Number	75	175	250	150

2 Solve $\frac{x-3}{4} + \frac{x-3}{2} = 3$

3 Write $18^3 \times 15^3$ as a product of powers of prime numbers.

4 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.



5 Priya read $\frac{3}{10}$ of a book on Saturday.

On Sunday she read $\frac{6}{7}$ of the pages that were left.
She still had 35 pages to read.
How many pages are in the book?

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6 The ratio of blue to green sweets in a tin is 8 : 5. Then $\frac{3}{4}$ of the blue and $\frac{1}{4}$ of the green are taken out. Work out the ratio of blue to green now.	
7 The price of a car is decreased by x%. The new price is then increased by x%. The final price is 4% less than the original price. Work out the value of x.	
8 The nth term of a sequence is $n^2 - 3n + 3$. (a) Work out the 7th term. (b) Is 13 a term of the sequence? You must show your working.	
9 F is directly proportional to m and inversely proportional to the square of d. When m = 6 and d = 3, F = 8. Work out the value of F when m = 2 and d = 2.	
10 A cone is cut parallel to its base to make a smaller cone and a frustum. The frustum has height 1 cm, top radius 6 cm and base radius 9 cm. Work out the volume of the frustum. Give your answer in terms of π. 