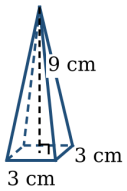
Day 303 **A Tier 10-a-day**

1 The diagram shows a pyramid with a square base of side 3 cm.
The perpendicular height of the pyramid is 9 cm.
Work out the volume of the pyramid.
The diagram is not drawn accurately.



2 (a) Solve $10 \leq 5x + 5 < 25$
(b) Write down all the integer values of x that satisfy this inequality.

3 The frequency table shows data for 23 children.
(a) Find the median.
(b) Work out the range.

Number of siblings	0	1	2	3	4
Frequency	1	4	5	6	7

4 Mo invests £1,500 in a savings account. (Calculator)
The account pays compound interest at 3.5% per year.
Work out the total interest earned after 4 years.

5 A scientist wants to estimate the number of deer in a forest.
She catches 40 deer, marks each one and returns them.
Later she catches a second sample of 50 deer. 10 of these are marked.
Work out an estimate for the total number of deer in a forest.

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6 In a school, 40% of the students are boys. (Calculator) 30% of the boys and 30% of the girls walk to school. What percentage of all the students walk to school?	
7 Simplify fully $\frac{x^2 - 6x + 8}{x^2 - 4}$	
8 A plane leaves an airport and travels 18 km on a bearing of 140°. (Calculator) It then travels 24 km on a bearing of 050°. (a) Work out how far it is now from the airport. (b) Work out the bearing of its final position from the airport. Give your answer to the nearest degree.	
9 A solid is made from a cylinder and a hemisphere. The cylinder has radius 9 cm and height 6 cm. The hemisphere has the same radius as the cylinder and sits on top of it. Work out the total volume. Give your answer in terms of π.	
10 Write $0.7\dot{6}$ as a fraction in its simplest form.	