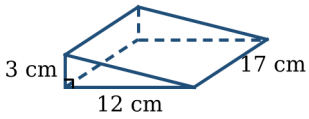
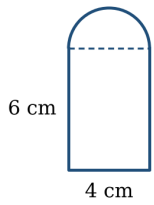
Day 18 **A Tier 10-a-day**

1 The diagram shows a prism.
The cross-section of the prism is a right-angled triangle.
Work out the volume of the prism.
The diagram is not drawn accurately.



2 There are 37 students in a class.
16 students do football and 17 students do hockey.
7 students do neither.
(a) Work out how many students do both.
(b) One student is chosen at random. Find the probability that they do football only.

3 The diagram shows a shape made from a rectangle and a semicircle.
Work out the area of the shape.
Give your answer in terms of π.
The diagram is not drawn accurately.



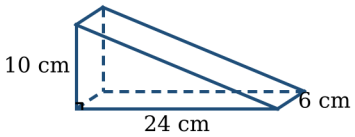
4 Work out the value of
(a) $4^{\frac{3}{2}}$
(b) $(\frac{1}{4})^{-2}$

5 The mean of the five numbers 10, 3, 19, 20, x is 11.
Work out the value of x.

Day 18 **A Tier 10-a-day**

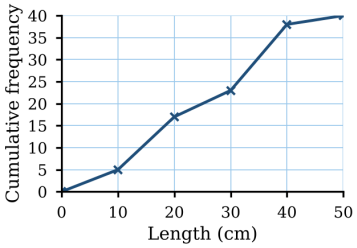
6 $f(x) = 3x + 2$
$g(x) = x^2 - 8$
Find $fg(-2)$

7 The diagram shows a triangular prism.
The cross-section is a right-angled triangle.
Work out the total surface area of the prism.
The diagram is not drawn accurately.



8 (a) Change 4,800 cm^3 to litres.
(b) Change 3,500,000 cm^3 to m^3.

9 The cumulative frequency graph shows information about the length of 40 leaves.
Use the graph to find an estimate for
(a) the median,
(b) the number of leaves with a length greater than 10 cm.



10 Simplify fully

$$\frac{x^2 - 5x - 14}{x^2 + 7x + 10}$$