Day 359 **S Tier 10-a-day**

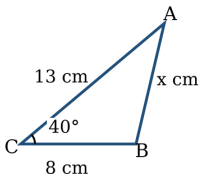
1 (a) Solve $-3 - 2x < 11$
(b) n is an integer. Write down all the values of n that satisfy
$-19 < 4n - 3 < 1$

2 The table shows information about 110 employees.
(a) An employee who travels to work by car is chosen at random. Work out the probability that this employee is a woman.
(b) Two of the 110 employees are chosen at random. Work out the probability that both are women.

	Bus	Car	Walk
Men	12	14	18
Women	21	18	27

3 Simplify $(8x^6y^{-3})^{\frac{1}{3}}$

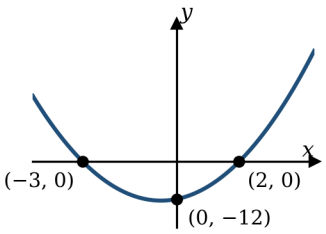
4 The diagram shows triangle ABC. (Calculator)
(a) Work out the length of AB, marked x, to 1 decimal place.
(b) Work out the area of triangle ABC to 3 significant figures.
The diagram is not drawn accurately.



5 Work out $(2.5 \times 10^5) - (5.3 \times 10^2)$
Give your answer in standard form.

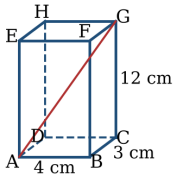
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6 The diagram shows a sketch of a quadratic curve. It crosses the axes at the points shown.
Find an equation of the curve.
Give your answer in the form $y = ax^2 + bx + c$.



7 The edge length of a cube is decreased by 10%.
Work out the percentage change in the volume of the cube.

8 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.



9 Machine A makes 40% of the bolts in a factory.
Machine B makes the rest.
80% of the bolts from machine A are faulty.
30% of the bolts from machine B are faulty.
(a) Work out the probability that a bolt chosen at random is faulty.
(b) A faulty bolt is found. Work out the probability that it was made by machine A.

10 ABCD is a rectangle with AB = 14 cm and AD = 13 cm.
A point P inside the rectangle is such that AP ≤ 10 cm and P is nearer to AB than to AD.
Work out the area of the region in which P can lie. Give your answer in terms of π.