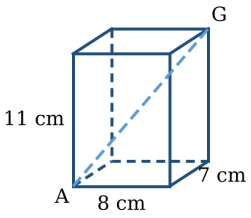
Day 53 **A Tier 10-a-day**

1 5 machines take 21 hours to make a batch of bottles.
All the machines work at the same rate.
How many machines are needed to make a batch of bottles in 7 hours?

2 The diagram shows a cuboid.
Work out the length of the diagonal AG.
(Calculator)
Give your answer to 3 significant figures.
The diagram is not drawn accurately.



3 The table shows information about 52 people.
One person is chosen at random.
(a) Find the probability that the person chose tea.
(b) The person is a child. Find the probability that they chose coffee.

	Tea	Coffee	Total
Adults	7	15	22
Children	23	7	30
Total	30	22	52

4 A closed gift box is a cuboid measuring 14 cm by 5 cm by 9 cm.
Work out the total surface area.

5 Solve $x^2 - 2x = 15$

Day 53 **A Tier 10-a-day**

6 Work out $(3\frac{2}{3} - 3\frac{1}{6}) \times 2\frac{5}{6}$

Give your answer as a mixed number in its simplest form.

7 A solid hemisphere has radius 13 cm.
Work out the total surface area of the hemisphere.
Give your answer in terms of π.

8 Show that $\frac{\sqrt{48} - \sqrt{12}}{\sqrt{3}}$ is an integer, and find its value.

9 The table gives information about 79 measurements.
A histogram is drawn using this information.
(a) Work out the missing frequency.
(b) Work out the height of the bar for the class $40 < l \leq 45$.

Length, l (mm)	Frequency
$0 < l \leq 20$	28
$20 < l \leq 40$	?
$40 < l \leq 45$	7
$45 < l \leq 55$	4

10 y is inversely proportional to the square of x.
When x = 1, y = 12.
(a) Find a formula for y in terms of x.
(b) Work out the value of y when x = 2.