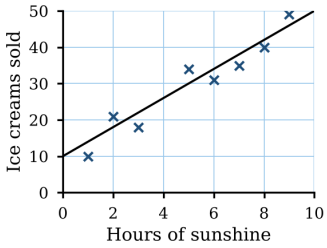
Day 20 **A Tier 10-a-day**

1 A radio mast is at point A. Its signal reaches up to 4 km.
A radio mast at B reaches up to 6 km.
Describe the region where both signals can be received.

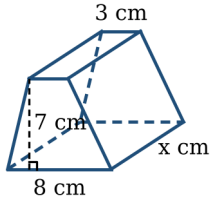
2 Work out $1\frac{1}{2} - 1\frac{1}{6}$
Give your answer as a mixed number in its simplest form.

3 A closed gift box is a cuboid measuring 12 cm by 10 cm by 2 cm.
Work out the total surface area.

4 The scatter graph shows the hours of sunshine and the number of ice creams sold on some days.
A line of best fit is drawn.
(a) Describe the correlation.
(b) Estimate the number of ice creams sold on a day with 8 hours of sunshine.



5 The diagram shows a prism with a trapezium as its cross-section.
The volume of the prism is 539 cm^3.
Work out the value of x.
The diagram is not drawn accurately.



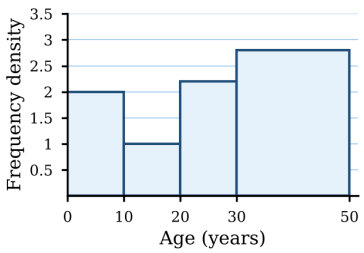
Day 20	A Tier 10-a-day

6 Solve $2^{2x+3} = 2048$

7 A and B are independent events.
P(A) = 0.7 and P(B) = 0.2.
(a) Work out P(A and B).
(b) Work out P(A or B).

8 (a) Show that the equation $x^3 + 4x - 30 = 0$ can be rearranged to give $x = \sqrt[3]{30 - 4x}$
(b) Show that the equation has a solution between x = 2 and x = 3

9 The histogram shows information about the age of some items.
(a) Work out the number of items with a age in the class 30 to 50 years.
(b) Work out an estimate for the number with a age greater than 15 years.



10 Solve $x^2 - 8x \geq 0$