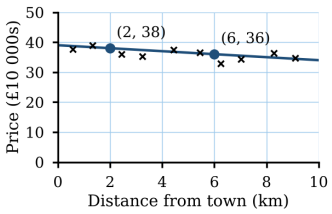
Day 30 **S Tier 10-a-day**

1 Solve $\frac{x+6}{5} + \frac{x-5}{2} = -2$

2 The scatter graph shows distance from town (x) and price (y).
The line of best fit passes through (2, 38) and (6, 36).
(a) Find its equation in the form y = mx + c.
(b) Explain what its gradient tells you.



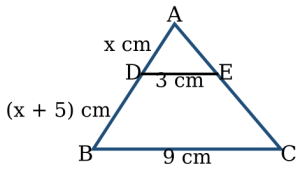
3 A church bell rings every 4 minutes.
Another bell rings every 6 minutes.
A third bell rings every 21 minutes.
They all ring together at 9:00 am.
How many times do they all ring together between 9:00 am and 3:00 pm, including both 9:00 am and 3:00 pm if they do?

4 The ratio of juniors to seniors in a school is 3 : 2.
10% of the juniors and 50% of the seniors play a sport.
What percentage of all of these students play a sport?

5 Expand and simplify $(6 + 2\sqrt{6})(6 + \sqrt{6})$
Give your answer in the form $p + q\sqrt{6}$

Day 30	S Tier 10-a-day

6 In the diagram, DE is parallel to BC.
AD = x cm, DB = (x + 5) cm, DE = 3 cm and BC = 9 cm.
(a) Find the value of x.
(b) Work out the length of AB.
The diagram is not drawn accurately.



7 The lengths of the sides of a right-angled triangle are $(x - 5)$ cm, $(x - 4)$ cm and $(x - 3)$ cm.
The longest side is $(x - 3)$ cm.
(a) Show that $x^2 - 12x + 32 = 0$
(b) Hence work out the area of the triangle.

8 OA = $\mathbf{a}$ and OB = $\mathbf{b}$.
OP = $3\mathbf{b}$, OQ = $-2\mathbf{a} + 13\mathbf{b}$ and OR = $-6\mathbf{a} + 33\mathbf{b}$.
(a) Show that P, Q and R lie on a straight line.
(b) Work out the ratio PQ : QR in its simplest form.

9 (a) Solve $6 - 3x \geq -6$
(b) n is an integer. Write down all the values of n that satisfy
$-2 < 3n + 1 < 10$

10 Write $0.0\dot{0}3\dot{9}$ as a fraction in its simplest form.