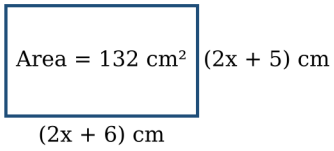
Day 145	S Tier 10-a-day
1 Given that $\frac{25^3 \times 5^4}{5^3} = 5^n$, find the value of n.	
2 Factorise $4x^2 + 8x - 5$	
3 R is 30% more than Q. Q is 25% less than P. Work out R as a percentage of P.	
4 Here are five numbers: $x - 3$, $x - 2$, $x + 2$, 2, $3x - 2$. The mean of the five numbers is 9. (a) Work out the value of x. (b) Work out the range of the five numbers.	
5 Here are the first five terms of a quadratic sequence. 1, −4, −11, −20, −31 Find an expression for the nth term.	

Day 145 **S Tier 10-a-day**

6 The HCF of two numbers is 7 and their LCM is 252.
One of the numbers is 28.
Work out the other number.

7 The diagram shows a rectangle of length (2x + 6) cm, width (2x + 5) cm and area 132 cm^2.
(a) Show that $4x^2 + 22x - 102 = 0$.
(b) Work out the length of the diagonal of the rectangle. Give your answer correct to 3 significant figures.



8 Simplify fully $\frac{x^2 + 7x + 12}{x - 1} \div \frac{x + 3}{x^2 + 4x - 5}$

9 Oscar and Liam share some money in the ratio 8 : 5.
Oscar gives Liam £4.
The ratio of their money is now 3 : 2.
How much money do they have altogether?

10 ABC is a right-angled triangle.
Work out the exact value of x. Give your answer in its simplest form.
The diagram is not drawn accurately.

