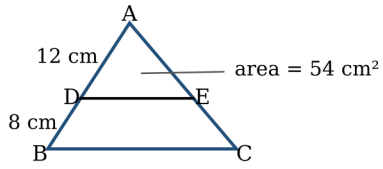
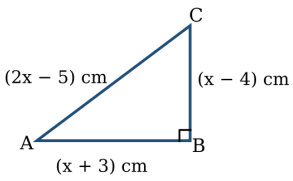
Day 240	S Tier 10-a-day
1 The mean of 11 numbers is 100. A new number is added and the mean of all 12 numbers is 93. Work out the new number.	
2 Work out $2\frac{1}{3} \times 2\frac{5}{8} - 4\frac{1}{2}$ Give your answer as a mixed number or a fraction in its simplest form.	
3 Solve $4x^2 - 2x - 3 = 0$ (Calculator) Give your answers correct to 2 decimal places.	
4 In the diagram, DE is parallel to BC. AD = 12 cm, DB = 8 cm and the area of triangle ADE is 54 cm^2. Work out the area of the trapezium DBCE. The diagram is not drawn accurately. 	
5 E is directly proportional to v. When v = 1, E = 12. (a) Find a formula for E in terms of v. (b) Work out the value of E when v = 4.	

Day 240 **S Tier 10-a-day**

6 ABC is a right-angled triangle with sides (x + 3) cm, (x − 4) cm and (2x − 5) cm. The longest side is (2x − 5) cm.
(a) Find the value of x.
(b) Work out the area of the triangle.
The diagram is not drawn accurately.



7 Work out $\left(\frac{125}{27}\right)^{-\frac{7}{3}}$

8 Solve $2^{4x+4} = 4^{x+4}$

9 The 2nd term of a geometric sequence is 24.
The 5th term of the sequence is 81.
(a) Work out the common ratio.
(b) Work out the first term.

10 Work out the exact value of $(\tan 60°)^2 + \tan 45°$
Give your answer in its simplest form, as a fraction or surd. Do not use a calculator.