Day 234 **IGCSE 10-a-day**

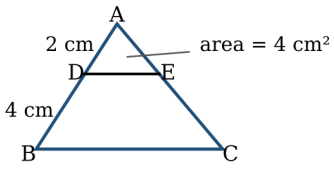
1 A curve has equation $y = 2x^3 + 3x^2 - 36x + 5$.
Find the coordinates of the stationary points of the curve.

2 Solve $\frac{x+3}{8} - \frac{x+5}{2} = -4$

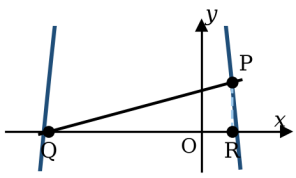
3 The table shows the number of students in each of four groups.
(a) A stratified sample of 38 is taken. Work out how many come from Year 9.
(b) A different stratified sample has 16 from Year 7. Work out the size of this sample.

	Year 7	Year 8	Year 9	Year 10
Number	200	225	275	250

4 In the diagram, DE is parallel to BC. AD = 2 cm, DB = 4 cm and the area of triangle ADE is 4 cm^2.
Work out the area of the trapezium DBCE.
The diagram is not drawn accurately.



5 $f(x) = -6x^{-1/2} + 4x^{-3/2}$
Find $f'(x)$ and work out the value of $f'(4)$.

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6 The value of a house is increased by 8% in one year. The next year its value is increased by 10%. It is now worth £297,000. Work out the value of the house before the first change.	
7 Solve $x - 13\sqrt{x} + 42 = 0$	
8 $g(x) = x^2 + 4x + 10$ for $x \leq -2$. (a) Find the range of g. (b) Find $g^{-1}(x)$.	
9 The diagram shows the curve $y = -x^2 - 4x + 6$ and the normal at P(1, 1), meeting the x-axis at Q. R is (1, 0). (a) Find the normal in the form $x + ky = c$. (b) Work out the area of triangle PQR. 	
10 An arithmetic sequence has term 4 equal to -1 and term 9 equal to 19. (a) Find an expression for the nth term. (b) Find the first term of the sequence that is greater than 250.	