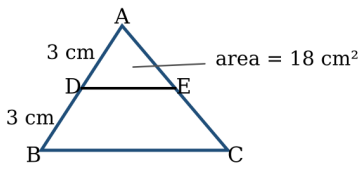
Day 173	IGCSE 10-a-day
1 The mean of 9 numbers is 133. One number is removed and the mean of the remaining 8 numbers is 145.25. Work out the number that was removed.	
2 The curve $y = x^3 + ax^2 + bx$ has gradient 5 when $x = 1$ and gradient 25 when $x = 3$. Find the values of a and b.	
3 Hire Shop A has a delivery charge of £4 plus £5.50 per day. Hire Shop B has a delivery charge of £10 plus £5 per day. (a) Work out the number of days for which the two costs are the same. (b) Which is cheaper for 20 days, and by how much?	
4 $M = \begin{pmatrix} 4 & 0 \\ 0 & 4 \end{pmatrix}$. (a) Find the coordinates of the image of the point $(-1, 1)$ under the transformation represented by M. (b) Describe fully the single transformation represented by M.	
5 In the diagram, DE is parallel to BC. AD = 3 cm, DB = 3 cm and the area of triangle ADE is 18 cm^2. Work out the area of the trapezium DBCE. The diagram is not drawn accurately. 	

Day 173	IGCSE 10-a-day
6 x and y satisfy $x \geq 0$, $y \geq 0$, $2x + 4y \leq 52$ and $5x + 5y \leq 90$. Find the greatest value of $P = 2x + 3y$ and the values of x and y that give it.	
7 The ratio of blue to green sweets in a tin is 5 : 6. Then $\frac{1}{5}$ of the blue and $\frac{1}{4}$ of the green are taken out. Work out the ratio of blue to green now.	
8 The tangent to the curve $y = 2x^2 - x + 6$ at the point where $x = 0$ meets the axes at A and B. Work out the area of triangle OAB, where O is the origin.	
9 The height of a tower is 360 m, correct to the nearest 5. Write down the error interval for the height of a tower, using h.	
10 The tangent to the curve $y = x^3 - x^2 - 2x - 4$ at the point P where $x = 0$ meets the curve again at Q. Find the coordinates of Q.	