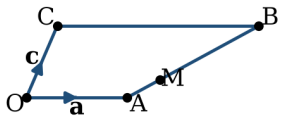
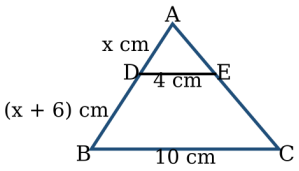
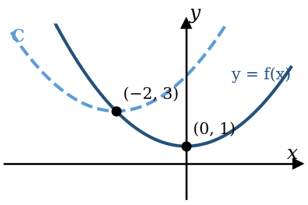
| Day 135 | IGCSE 10-a-day |
|---|---|
| **1** OABC is a trapezium. OA is parallel to CB and CB = 2 × OA.<br>$\mathbf{OA} = \mathbf{a}$ and $\mathbf{OC} = \mathbf{c}$.<br>(a) Find $\mathbf{AB}$ in terms of $\mathbf{a}$ and $\mathbf{c}$.<br>(b) AM : MB = 1 : 3. Find $\mathbf{OM}$.<br> | |
| **2** (a) Solve $-4 - 5x \leq 16$<br>(b) n is an integer. Write down all the values of n that satisfy<br>$-9 \leq 2n - 1 \leq -3$ | |
| **3** A is 60% less than D.<br>D is 30% more than C.<br>Work out A as a percentage of C. | |
| **4** $y = 2x^3 - 6x - 1$<br>(a) Show that there is a stationary point at x = 1.<br>(b) By finding the gradient when $x = \frac{1}{2}$ and when $x = \frac{3}{2}$, decide whether it is a maximum or a minimum. | |
| **5** Solve $5^{x-2} = 25$ | |

**Day 135** **IGCSE 10-a-day**

**6** In the diagram, DE is parallel to BC.
AD = x cm, DB = (x + 6) cm, DE = 4 cm and BC = 10 cm.
(a) Find the value of x.
(b) Work out the length of AB.
The diagram is not drawn accurately.




**7** The diagram shows the graph of y = f(x) with a minimum point at (0, 1).
The dashed curve C is the image of y = f(x) after a translation.
The minimum point of C is (−2, 3).
Write down the equation of C in terms of f.




**8** The normal to the curve $y = x^2 - 5x + 3$ at the point P where x = 2 meets the curve again at Q.
Find the coordinates of Q.

**9** A shop mixes two types of tea.
Type A costs £14.00 per kg and type B costs £12.00 per kg.
They are mixed in the ratio A : B = 2 : 3.
The mixture is sold for £14.08 per kg.
Work out the percentage profit.

**10** $y = 3x^4 - 24x^2 - 9$
Find the coordinates of the stationary points of the curve and determine the nature of each.