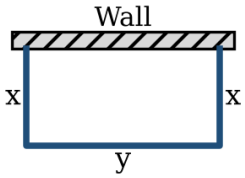
Day 326 **IGCSE 10-a-day**

1 A farmer uses 24 m of fencing to enclose a rectangle against a wall, as shown.

(a) Show that the area, A m^2, is $A = 24x - 2x^2$.

(b) Find the maximum area, proving it is a maximum.



2 Solve $2 \cos x = 0.4$ for $0 \leq x \leq 360$.

Give your answers correct to 1 decimal place.

(Calculator)

3 20 fish in a lake are caught, tagged and put back.

Later, a second sample of 120 fish is caught. 3 of these are tagged.

(a) Work out an estimate for the number of fish in a lake.

(b) State one assumption you have made.

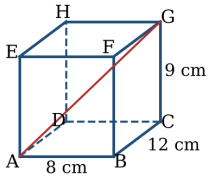
4 The diagram shows a cuboid ABCDEFGH.

(Calculator)

(a) Work out the length of the diagonal AG.

(b) Work out the angle between AG and the base ABCD, to 1 decimal place.

The diagram is not drawn accurately.

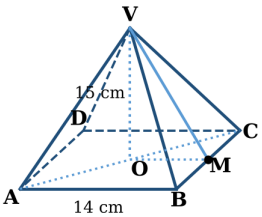


5 The lengths of the sides of a right-angled triangle are $(x - 2)$ cm, $(x - 3)$ cm and $(x - 1)$ cm.

The longest side is $(x - 1)$ cm.

(a) Show that $x^2 - 8x + 12 = 0$

(b) Hence work out the area of the triangle.

Day 326	IGCSE 10-a-day
6 Show that $3^{m+3} - 3^m$ is a multiple of 26 for all integer values of m.	
7 $y = 2x^3 + 3x^2 - 12x - 4$ (a) Show that there is a stationary point at x = 1. (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.	
8 VABCD is a pyramid. The base ABCD is a square with sides of 14 cm. The vertex V is 15 cm vertically above the centre O of the base. M is the midpoint of BC. Work out the angle between the face VBC and the base. (Calculator) 	
9 $y = x(x - 4)(2x + 2)$ Work out the gradient of the curve at the point where x = 2.	
10 The volume of a cube is 191 cm^3, correct to the nearest cm^3. Work out the upper bound of the edge length of the cube. Give your answer correct to 3 significant figures. (Calculator)	