Day 156 **IGCSE 10-a-day**

1 The sum of the interior angles of a polygon is 1800°.
Work out the number of sides of the polygon.

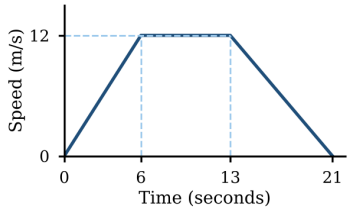
2 The table shows information about 83 employees.
(a) An employee who travels to work by car is chosen at random. Work out the probability that this employee is a man.
(b) Two of the 83 employees are chosen at random. Work out the probability that both are men.

	Bus	Car	Walk
Men	15	28	5
Women	12	18	5

3 Expand and simplify $(x - 3)^2(x - 2)$

4 $y = (x - 2)^2(x - 4)$
Show that $\frac{dy}{dx} = (x - 2)(3x - 10)$.

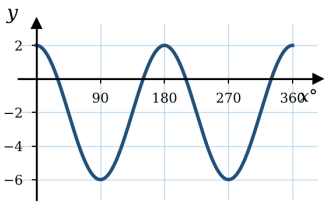
5 The graph shows the speed of a train during 21 seconds.
(a) Work out the acceleration during the first 6 seconds.
(b) Work out the average speed over the whole 21 seconds.



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6 $y = 2x^3 + 6x^2 - 3$
At the point where $x = 2$, is the curve increasing or decreasing? You must show your working.

7 The diagram shows the graph of $y = a \cos bx° + c$ for $0 \leq x \leq 360$.
a, b and c are integers.
Find the values of a, b and c.



8 A curve has equation $y = 2x^4 - 4x^2 - 6$.
Find the coordinates of the stationary points of the curve and determine the nature of each.

9 Simplify $\frac{1}{2+\sqrt{3}} - \frac{1}{2-\sqrt{3}}$
Give your answer with a rational denominator.

10 p = 10.3 and r = 8.6, each correct to 1 decimal place.
q = 1.22, correct to 2 decimal places.
Work out the lower bound of $\frac{p-q}{r}$. Give your answer correct to 3 significant figures.
(Calculator)