Day 88 **S Tier 10-a-day**

1 Each interior angle of a regular polygon is 14 times the size of each exterior angle.
Work out the number of sides of the polygon.

2 The table gives information about the times taken by some people to travel to work.
An estimate for the mean is 30.2.
Work out the value of x.

Time, t (minutes)	Frequency
$10 < t \leq 20$	10
$20 < t \leq 30$	13
$30 < t \leq 40$	x
$40 < t \leq 50$	9

3 Make l the subject of $T = \frac{7}{\sqrt{l}}$

4 A is the point $(-1, 2)$ and B is the point $(3, -4)$.
Find an equation of the perpendicular bisector of AB. Give your answer in the form $ax + by = c$, where a, b and c are integers.

5 Work out $(6.8 \times 10^7) + (4.5 \times 10^4)$
Give your answer in standard form.

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6 A circular arc has a chord AB of length 48 cm.
The greatest distance between the chord and the arc is 12 cm.
Work out the radius of the circle.

7 Work out $(2.3 \times 10^{-3})^2$
Give your answer in standard form.

8 A rectangle has area $(25 + 11\sqrt{5})$ cm^2 and length $(2 + \sqrt{5})$ cm.
Find the width of the rectangle.
Give your answer in the form $a + b\sqrt{5}$

9 Prove algebraically that the difference between the cubes of any two consecutive integers is always an odd number.

10 The histogram shows the masses of parcels delivered by a courier.
30 of them had a mass between 40 and 70 kg.
(a) How many had a mass between 0 and 10 kg?
(b) How many parcels are there in total?

