Day 317 **A Tier 10-a-day**

1 Expand and simplify

$(2x + 8)^2$

2 The table shows information about 31 children.

(a) Find the median.

(b) Work out the range.

Number of siblings	0	1	2	3	4
Frequency	9	5	6	3	8

3 A cuboid has length 7 cm and width 3 cm.

Its total surface area is 162 cm^2.

Work out the height of the cuboid.

4 Expand and simplify

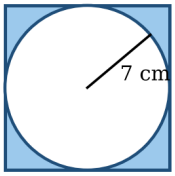
$(x + 3)^2 - (x - 4)(x + 6)$

5 The table shows the probabilities of the outcomes of a biased spinner.

(a) Work out the value of x.

(b) The spinner is spun 300 times. Estimate the number of times it lands on green.

Colour	Red	Blue	Green	Yellow
Probability	0.15	x	x	0.65

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6 A circle of radius 7 cm fits exactly inside a square. The circle touches all four sides of the square. (Calculator) Work out the area of the shaded region. Give your answer to 3 significant figures.  	
7 A roll of ribbon is $16\frac{7}{8}$ metres long. Pieces of $\frac{5}{8}$ metre are cut from it. How many pieces can be cut?	
8 A new car is worth £8000. (Calculator) Its value falls by 5% each year. Work out its value after 2 years.	
9 A solid hemisphere has radius 8 cm. Work out the total surface area of the hemisphere. Give your answer in terms of π.	
10 A cyclist travels 310 metres in 16.3 seconds. The distance is correct to the nearest 10 metres and the time to the nearest 0.1 second. (a) Work out the upper bound and the lower bound of the speed in m/s. (b) Write the speed to a suitable degree of accuracy. Give a reason for your answer.	