Day 318 **A Tier 10-a-day**

1 Here are the results for 19 children.
(a) Find the median.
(b) Work out the range.

Number of siblings	0	1	2	3	4
Frequency	2	3	6	7	1

2 A circular table top has diameter 16 cm.
Work out, in terms of π,
(a) the circumference,
(b) the area.

3 The number of members of a club was 240 and is now 96.
Work out the percentage decrease.

4 A house is worth £250000. (Calculator)
Its value increases by 10% each year.
Work out its value after 3 years., to the nearest pound.

5 A ladder reaches 6 m up a vertical wall.
The ladder is 10 m long.
Work out how far the foot of the ladder is from the wall.

Day 318	A Tier 10-a-day
6 The curve C has equation $y = -x^2 + 2x + 8$ (a) Find the coordinates of the points where C crosses the x-axis. (b) Find the coordinates of the turning point of C.	
7 A tank is in the shape of a cuboid measuring 100 cm by 60 cm by 40 cm. It already contains 100 litres of water. Water flows in at 10 litres per minute until the tank is full. Work out how long this takes. Give your answer in minutes.	
8 There are 200 passengers on a plane. 60% of the passengers are children. 30% of the children are under 5 years old. How many passengers are children under 5?	
9 The point P(−12, −5) lies on a circle with centre O(0, 0). (a) Work out the equation of the circle, in the form $x^2 + y^2 = r^2$. (b) Find the equation of the tangent to the circle at P.	
10 A cyclist travels 190 metres in 17.4 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.	