Day 135 **A Tier 10-a-day**

1 The table shows information about 66 people.
One person is chosen at random.
(a) Find the probability that the person is a girl and studies Spanish.
(b) The person studies French. Find the probability that they are a boy.

	French	Spanish	Total
Boys	8	18	26
Girls	11	29	40
Total	19	47	66

2 A circular pond has diameter 12 m.
Work out, in terms of π,
(a) the circumference,
(b) the area.

3 Work out $3\frac{3}{5} \div 4\frac{1}{2}$
Give your answer as a mixed number in its simplest form.

4 A company has 325 employees in Sales, 225 in Admin and 250 in Production.
A stratified sample of 32 employees is to be taken.
Work out how many employees should be chosen from Admin.

5 Jack invests £4,500 in a bank account. (Calculator)
The account pays compound interest at 3% per year.
Work out the value of the investment after 3 years.

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6 Two similar models are 6 cm and 8 cm tall. The surface area of the smaller model is 180 cm^2. Work out the surface area of the larger model.	
7 Rationalise the denominator of $\frac{2}{2\sqrt{5}}$ Give your answer in its simplest form.	
8 Expand and simplify $(x - 4)(x - 5)(x - 3)$	
9 Write as a single fraction $\frac{-5}{(x - 1)} - \frac{5}{(x + 5)}$	
10 PA is a tangent to a circle with centre O. A is on the circle. The radius is 24 cm and OP = 25 cm. Work out the length of PA. The diagram is not drawn accurately. 	