Day 196 **A Tier 10-a-day**

1 Sam and Noah share £100 in the ratio 1 : 3.
How much more money does Noah get than Sam?

2 Triangle UVW: angle V = 90°, UW = 14 cm, UV = 8 cm.
Triangle ABC: angle C = 90°, AB = 14 cm, AC = 8 cm.
Are the two triangles congruent?
Give a reason for your answer.

3 The exchange rate is £1 = $1.25. (Calculator)
Mo changes £750 into US dollars and spends $656.25.
Mo changes the rest back into pounds at the same rate.
How much does Mo get back?

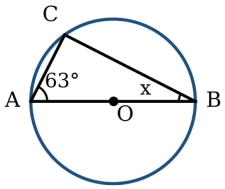
4 The line L has equation $y = \frac{3}{2}x + 8$
Find the equation of the line that is parallel to L and passes through the point (2, 10).

5 The table shows the probabilities of the outcomes of a biased four-sided dice.
(a) Work out the value of x.
(b) The four-sided dice is rolled 300 times.
Estimate the number of times it lands on 2.

Score	1	2	3	4
Probability	0.25	x	x	0.35

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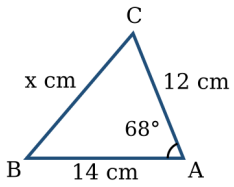
6 AB is a diameter of the circle.
Angle BAC = 63°.
Work out the size of angle x.
Give a reason for each step of your working.



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

8 A bag contains 3 mint sweets and 4 toffee sweets.
Three sweets are taken at random without replacement.
Work out the probability that exactly one of the three sweets is toffee.

9 Work out the value of x. (Calculator)
Give your answer to 3 significant figures.
The diagram is not drawn accurately.



10 Simplify fully
$$\frac{x^2 - x - 6}{x^2 - 2x - 8}$$