Day 48 **S Tier 10-a-day**

1 A and B are two events.
P(A) = 0.6, P(B) = 0.2 and P(A or B) = 0.68
(a) Work out P(A and B).
(b) Are A and B independent? You must show your working.

2 The distance to a village is 5.1 km, truncated to 1 decimal place.
Write down the error interval for the distance to a village, using d.

3 The table shows the number of members in each of four groups.
(a) A stratified sample of 29 is taken. Work out how many come from Group A.
(b) A different stratified sample has 30 from Group B. Work out the size of this sample.

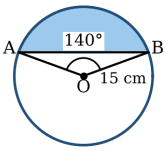
	Group A	Group B	Group C	Group D
Number	225	250	100	150

4 Work out $(2.1 \times 10^7) + (9.5 \times 10^6)$
Give your answer in standard form.

5 Zane, Liam and Nadia share some money.
Zane : Liam = 7 : 4
Liam : Nadia = 7 : 8
(a) Work out the ratio Zane : Liam : Nadia.
(b) They share £1090 altogether. How much money does Zane get?

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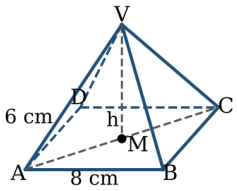
6 The circle has centre O and radius 15 cm. A and B are points on the circle and angle AOB = 140°. (Calculator)
Work out the area of the shaded segment. Give your answer correct to 3 significant figures.
The diagram is not drawn accurately.



7 Solve $x - 9\sqrt{x} + 14 = 0$

8 Ravi cycles $\frac{4}{7}$ of a route before lunch.
After lunch he cycles $\frac{2}{3}$ of the remaining distance.
The distance he cycles after lunch is 36 km.
How long is the route, in km?

9 VABCD is a pyramid on a square base. V is directly above the centre M.
(a) Work out the height VM of the pyramid.
(b) Work out the volume of the pyramid.
The diagram is not drawn accurately.



10 $f(x) = \frac{4x - 3}{x - 4}$ where $x \neq 4$
(a) Show that $ff(x) = x$.
(b) Write down $f^{-1}(x)$.