Day 67 **IGCSE 10-a-day**

1 The table shows the number of members in each of four groups.
(a) A stratified sample of 27 is taken. Work out how many come from Group C.
(b) A different stratified sample has 12 from Group C. Work out the size of this sample.

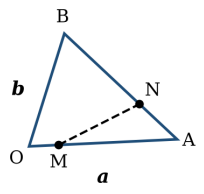
	Group A	Group B	Group C	Group D
Number	175	175	150	175

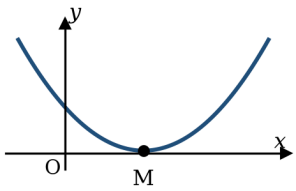
2 Solve $x^2 + 4x - 8 = 0$
Give your answers in the form $a \pm b\sqrt{c}$

3 $y = \frac{(5x + 2)^2}{x}$
Find $\frac{dy}{dx}$.

4 Simplify fully $\frac{3\sqrt{75}}{2\sqrt{3}}$

5 OAB is a triangle. OA = **a** and OB = **b**.
M is on OA with OM : MA = 1 : 4. N is on AB with AN : NB = 1 : 2.
(a) Find ON in terms of **a** and **b**.
(b) Find MN in terms of **a** and **b**.
The diagram is not drawn accurately.



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6 A van is bought for £18,000. Its value falls by 8% each year. Work out its value after 5 years. (Calculator)	
7 The diagram shows a sketch of the curve $y = ax^2 + bx + 19$. The curve has a turning point at M(3, 1). Find the values of a and b. 	
8 There are 79 visitors. 15 of them bought a drink and 15 of them bought a snack. 57 of them do neither. (a) Work out how many do both. (b) One of the visitors is chosen at random. Find the probability that they only bought a drink.	
9 Maya invested £12,500 in a savings account for 3 years. Compound interest was paid at a fixed rate per year. At the end of the 3 years the account held £14,060.80. Work out the annual rate of interest. (Calculator)	
10 A curve has equation $y = (x + 3)(x - 3)(x + 2)$. Work out the gradient of the curve at each point where it crosses the x-axis.	