Day 341 **IGCSE 10-a-day**

1 The table shows the number of members in each of four groups.
(a) A stratified sample of 22 is taken. Work out how many come from Group A.
(b) A different stratified sample has 27 from Group D. Work out the size of this sample.

	Group A	Group B	Group C	Group D
Number	60	60	140	180

2 The number p is 63.98 correct to 2 decimal places.
Write down the error interval for p.

3 $f(x) = 5x^3 - x^2 + 5$
(a) Find $f'(x)$.
(b) Work out the value of $f'(0)$.

4 Given that $x > 0$, solve $x^{\frac{5}{3}} = 3125$

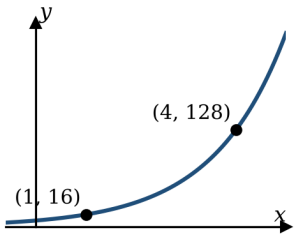
5 For $0 \leq x \leq 360$, a graph has equation
$y = 2 \sin 4x° + 1$
Write down
(a) the least value of y
(b) the greatest value of y

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6 A circular arc has a chord AB of length 36 cm.
The greatest distance between the chord and the arc is 6 cm.
Work out the radius of the circle.

7 The curve $y = x^3 + kx$ has a stationary point at $x = 3$.
(a) Find the value of k.
(b) Find the coordinates of the other stationary point.

8 The diagram shows the graph of $y = ka^x$, where k and a are constants and $a > 0$.
The curve passes through the points (1, 16) and (4, 128).
Find the value of k and the value of a.



9 $f(x) = 3x + \frac{3}{x}$ for $x > 0$
(a) Find the range of values of x for which f is a decreasing function.
(b) Write down the least value of f(x).

10 OAB is a triangle. OA = **a** and OB = **b**.
M is on OA with OM : MA = 3 : 2. N is on OB with ON : NB = 1 : 2. AN and BM intersect at X.
(a) Find BM in terms of **a** and **b**.
(b) Find OX in terms of **a** and **b**.
The diagram is not drawn accurately.

