Day 57 **A Tier 10-a-day**

1 By rounding each number to 1 significant figure, estimate the value of

$$\frac{27.2 + 2.8}{0.54}$$

2 A company has 220 employees in Sales, 100 in Admin and 180 in Production.
A stratified sample of 25 employees is to be taken.
Work out how many employees should be chosen from Admin.

3 A cafe menu has 5 starters, 3 main courses and 5 desserts.
(a) How many different three-course meals are possible?
(b) A customer chooses a main course and either a starter or a dessert (not both). How many different meals are possible?

4 A cuboid has length 6 cm and width 3 cm.
Its total surface area is 144 cm^2.
Work out the height of the cuboid.

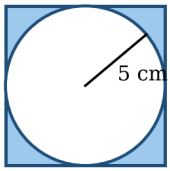
5 The table shows the distances, in km, travelled by 30 lorries.
(a) Write down the class that contains the median.
(b) Work out an estimate for the mean. Give your answer to 1 decimal place.

Distance, d (km)	Frequency
$0 < d \leq 10$	3
$10 < d \leq 20$	2
$20 < d \leq 30$	18
$30 < d \leq 40$	7

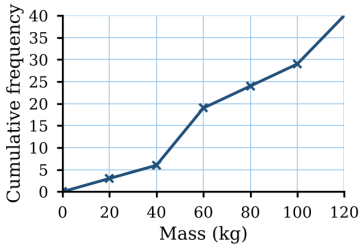
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6 (a) Write $x^2 - 2x - 3$ in the form $(x + a)^2 + b$
(b) Write down the coordinates of the turning point of the curve $y = x^2 - 2x - 3$

7 A circle of radius 5 cm fits exactly inside a square.
The circle touches all four sides of the square.
(Calculator)
Work out the area of the shaded region.
Give your answer to 3 significant figures.



8 The cumulative frequency graph shows information about the mass of 40 parcels.
Use the graph to find an estimate for
(a) the median,
(b) the number of parcels with a mass greater than 100 kg.



9 Make x the subject of $y = \frac{5x - 2}{x - 5}$

10 Convert 90 mm^2 into cm^2.