M4 = 36 days to go!

1 The waiting times for patients at a surgery are recorded in the table.

How many

Waiting time t (minutes)	Number of patients
$0 < t \leq 5$ 2.5	7
$5 < t \leq 10$ 7.5	8
$10 < t \leq 15$ 12.5	5
$15 < t \leq 20$ 17.5	5
$20 < t \leq 25$ 22.5	4
$25 < t \leq 30$ 27.5	1

BIG LIST

2.5, 2.5, 2.5, 2.5, 2.5, 2.5, 2.5

7.5, 7.5, 7.5, 7.5, 7.5, 7.5, 7.5, 7.5

12.5, 12.5, 12.5, 12.5, 12.5

17.5, 17.5, 17.5, 17.5, 17.5

22.5, 22.5, 22.5, 22.5

27.5

Calculate an estimate of the mean waiting time.

Answer 11.5 minutes [4]

x midpoints	f frequency	fx
2.5	7	17.5
7.5	8	60
12.5	5	62.5
17.5	5	87.5
22.5	4	90
27.5	1	27.5
	$\Sigma f = 30$	$\Sigma fx = 345$

$$\text{Mean} = \frac{\text{sum of } fx}{\text{sum of } f} = \frac{\Sigma fx}{\Sigma f} = \frac{345}{30} = 11.5$$

14 Stephen wants to survey 50 pupils in his school.

The number of pupils in each year group is given in the table below.

Year 8	Year 9	Year 10	Year 11	Year 12
126	161	154	145	170

Total = 756

For a stratified sample, how many pupils should Stephen include from Year 8?

Show your working out.

All to do with equal fractions.

50 from 756

$$\frac{50}{756} = \frac{?}{126}$$

Answer 8 [2]

$$\frac{50 \times 126}{756} = ?$$

$$8.\dot{3} = ?$$

Cannot have a decimal

Does this make sense?

8 out of 126 Year 8

Also other values here (just for fun!)

Year 9 10.65 ⟶ 11 students

Year 10 10.19 ⟶ 10 students

Year 11 9.59 ⟶ 10 students

Year 12 11.24 ⟶ 11 students.

These all add to 50

So we know we are correct!