FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

S5: Describing a population

Solve problems by using samples to describe populations

20 marks · 25 minutes · Non-calculator

1) A sample of 25 apples has a mean mass of 140 g. Estimate the total mass of 2000 apples in kg.

..... kg

[Question 1: 2 marks]

2) Sample A of 20 journey times has a mean of 32 minutes. Sample B of 30 has a mean of 27 minutes. Find the mean of all 50 times.

..... minutes

[Question 2: 3 marks]

3) In a sample of 80 people, 28 cycle to work. A town has 15000 workers. Estimate how many cycle. Jo says more than a third of the town cycles. Is she right?

.....

[Question 3: 3 marks]

4) A sample of 50 families has a mean of 2.4 children. Estimate the number of children in a town of 3200 families.

.....

[Question 4: 2 marks]

5) Weekly spending (£) of a sample: 12, 15, 18, 20, 22, 25, 40. Find the median and interquartile range.

. . . . . .

[Question 5: 3 marks]

6) 4 of 200 items tested are faulty. A batch of 7500 is acceptable if no more than 1.5% are faulty. Estimate the number of faulty items and decide whether the batch is acceptable.

. . . . . .

[Question 6: 4 marks]

7) Sample A has mean 54 and range 20. Sample B has mean 49 and range 35. Compare the samples.

[Question 7: 3 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	280	Total 2000 $\times$ 140 g (P1); A1.
2	29	640 + 810 (P1, P1); $\div$50 (A1).
3	5250; yes	$\frac{28}{80}$ = 35% (P1); 5250 (A1); 35% $>$ 33.3% (C1).
4	7680	2.4 $\times$ 3200 (P1); A1.
5	£20; £10	Median 20 (A1); LQ 15, UQ 25 (P1); A1.
6	150; no	2% faulty (P1); 150 (A1); limit 1.5% = 112.5 (P1); not acceptable (C1).
7	Comparison	A higher on average (C1); B more varied (C1); in context (C1).