FOUNDATION & HIGHER

SAME AT BOTH TIERS

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

P1: Recording outcomes

Solve problems using frequency trees, two-way tables and frequency tables

20 marks · 25 minutes · Non-calculator

1) 120 students are surveyed. $\frac{3}{8}$ of them have a pet. 60% of those with a pet have a dog. $\frac{1}{5}$ of those without a pet want one. How many students have a dog, and how many without a pet want one?

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[Question 1: 4 marks]

2) 80 people were asked if they like jazz. 35 are men. $\frac{2}{5}$ of the women and 20 of the men like jazz. What fraction of the 80 people like jazz?

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[Question 2: 3 marks]

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3) A spinner lands on red, blue or green. In 200 spins the relative frequency of red is 0.4. It lands on blue twice as often as green. How many times did it land on each colour?

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[Question 3: 3 marks]

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4) A dice is rolled 150 times. The relative frequency of a six is 0.24. How many more sixes were there than you would expect from a fair dice?

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[Question 4: 2 marks]

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5) Of 60 students, $\frac{1}{4}$ walk, 40% take the bus and the rest come by car. $\frac{2}{3}$ of those who come by car share with another family. How many students share a car?

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[Question 5: 3 marks]

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6) In 20 matches a team scored 0 goals 3 times, 1 goal x times, 2 goals 6 times, 3 goals 4 times and 4 goals twice. Find x and the mean number of goals per match.

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[Question 6: 3 marks]

7) 500 people are tested for a virus. 8% have it. The test is positive for 95% of those with the virus and for 5% of those without it. How many people test positive?

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[Question 7: 2 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	27; 15	45 have a pet (P1); 27 dogs (A1); 75 without, $\frac{1}{5}$ of 75 (P1); 15 (A1).
2	$\frac{19}{40}$	45 women, 18 like jazz (P1, P1); $\frac{38}{80}$ (A1).
3	Red 80, blue 80, green 40	80 red (P1); 120 split 2 : 1 (P1); A1.
4	11	36 sixes (P1); 36 − 25 (A1).
5	14	Car 60 − 15 − 24 = 21 (P1, P1); 14 (A1).
6	5; 1.85	x = 20 − 15 = 5 (P1); total goals 37 (P1); A1.
7	61	38 true positives (P1); 23 false positives, total 61 (A1).