5.4 Experimental Probability and Relative Frequency: 10-minute Pack

Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A coin is biased so that heads has probability 0.6 and tails 0.4. In 50 tosses, find the expected number of heads.

(2)

2 A spinner has 3 equal colours: red, green and yellow. A pupil spins it 90 times and records red 28 times. Calculate the relative frequency of red and find the difference between experimental and expected frequencies (experimental minus expected).

(2)

3 You flip a two-sided coin 20 times and get 12 heads. Another student flips a different coin 20 times and gets 8 heads. Which experimental result is closer to the expected frequency and by how many flips? Show working.

(2)

4 The probability that a seed grows into a plant is 9/10. Sam plants 200 seeds. How many plants should he expect?

(2)

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Mark scheme · 5.4 Experimental Probability and Relative Frequency: 10-minute Pack

Question 1

method: 50 x 0.6	**M1**
30 cao	**A1**

Answer: **30**

Question 2

relative frequency 28/90 = 14/45 or 0.311... shown	**M1**
expected 90/3 = 30 so difference = 28 - 30 = -2 cao	**A1**

Answer: **14/45; difference -2**

Question 3

method: expected for 20 flips is 10 heads and differences calculated |12-10| and |8-10|	**M1**
both are equally close by 2 flips cao	**A1**

Answer: **Both equally close by 2 flips**

Question 4

9/10 x 200	**M1**
180 cao	**A1**

Answer: **180**

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