

AQA, OCR, Edexcel

GCSE

GCSE Maths

Probability Answers

Name:

M M E

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Total Marks: /25

Probability

1. There are 12 sections on a spinner, 4 are blue, 6 are red and 2 are green.
 - What is the probability of it landing on green or blue? (2) $= \frac{1}{2}$
 - If there are 200 selections, how many blues would you expect? (2) $= 67$
 - Out of 200 spins there were only 5 green. Suggest an explanation for this? (1)
 - *This could have been chance / the spinner could have been biased*

(5 marks)

2. Ben flips an unbiased coin 3 times. He states that he is more likely to get heads, tails, heads, then all tails for the three flips. Is he correct? Explain your answer (3 marks)

- No
- They are equally likely
- Any combination of 3 flips has the same probability.

3. There are 10 counters in a bag, 6 are blue and 4 are yellow. Mary, Joe and Alice select a counter each. Mary goes first then Joe and finally Alice. Each time a counter is selected it is not replaced. Calculate the probability that:
(You may want to use a probability tree for all parts of this question)

- a) Mary, Joe and Alice all select Yellow counters (3) $= \frac{24}{720}$
- b) No blue counters are selected (1) $= \frac{24}{720}$
- c) That Mary selects a blue counter and the others get yellow (3) $= \frac{72}{720}$
- d) That there is at least 1 yellow counter left after all three selections (1)
100% or 1 or certain

(8 Marks)

4. Mark completes a survey which contains 3 questions. The answer to every question has to be yes or no. If there is a 60% chance of answering yes to each question, then calculate the probability that Mark:

(You may want to use a probability tree for the following questions)

a) Answers yes to every question (2 marks) = 0.216

b) Answers no to at least two of the questions. (3 marks) = $\frac{352}{1000}$

c) Answers yes, no yes to the three questions. (2 marks) = $\frac{144}{1000}$

(7 marks)

5. If the probability of getting an A is higher than that of achieving a B in Maths GCSE, and the probability of achieving less than a B is a $\frac{1}{2}$, give a possible probability for achieving an A? Explain your answer.

(2 marks)

- The probability of achieving an A and B is $\frac{1}{2}$
- A can be any probability between 0.26 and 0.49.

6. There are x balls in a bag,
8 of the balls are blue
3 of the balls are green

The rest of the balls are orange and pink.

Jake takes two balls from the bag without replacing, the probability that he takes a blue then a green ball is $\frac{1}{10}$. Find the total number of balls in the bag? (Very

Hard)

(6 Marks)

- = 16 Tip convert probability into quadratic then solve