

GCSE Maths: The probability scale and probability of single events (Foundation): worksheet

GCSE Maths - Probability - Foundation - Lesson 23.1

Name: _____

Date: _____

Score: _____

19 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch23-probability/foundation/the-probability-scale-and-probability-of-single-events/

Exercise 23A The probability scale and single events Non-calculator

1 Choose the best word from: **impossible, unlikely, even chance, likely, certain.**

(a) A fair coin lands on heads.

Answer: _____

(b) The day after Thursday is Friday.

Answer: _____

(c) A fair die lands on 7.

Answer: _____

(d) A bag has 1 red and 9 blue counters. A red counter is picked.

Answer: _____

(e) A bag has 9 red and 1 blue counter. A red counter is picked.

Answer: _____

(f) A fair die lands on a number less than 3.

Answer: _____

2 Write each of these as a number on the probability scale.

(a) An impossible event

Answer: _____

(b) An event with an even chance

Answer: _____

(c) A certain event

Answer: _____

3 Write each probability as a decimal and as a percentage.

(a) $\frac{3}{5}$

Answer: _____

(b) $\frac{7}{20}$

Answer: _____

(c) $\frac{1}{8}$

Answer:

(d) $\frac{9}{25}$

Answer:

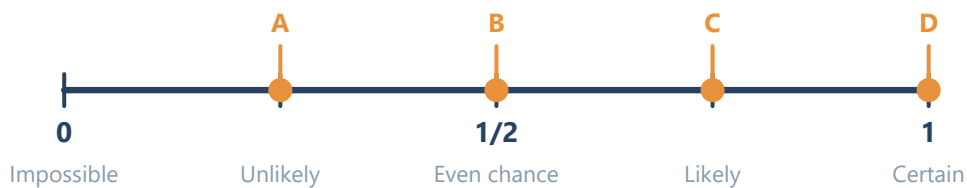
(e) $\frac{3}{4}$

Answer:

(f) $\frac{11}{50}$

Answer:

4 The probability scale shows four points, A, B, C and D. Match each event to a letter.



(a) A fair coin lands on tails

Answer:

(b) Spinner lands on red

Answer:

(c) A card from a pack is a spade

Answer:

(d) The sun rises tomorrow morning

Answer:

5 A fair six-sided die is rolled. Find the probability of each event. Give each answer as a fraction in its simplest form.

(a) rolling a 5

Answer:

(b) rolling an even number

Answer:

(c) rolling a number bigger than 4

Answer:

(d) rolling a multiple of 3

Answer:

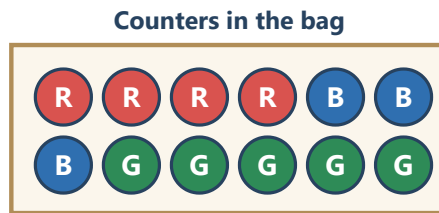
(e) rolling a number less than 7

Answer:

(f) rolling a 7

Answer:

- 6 The diagram shows the counters in a bag. One counter is picked at random. Find the probability that it is...



(a) red

Answer:

(b) blue

Answer:

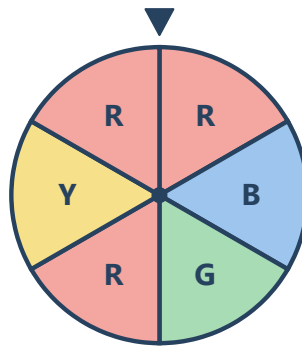
(c) green

Answer:

(d) red or blue

Answer:

- 7 The spinner has 6 equal sections. Find the probability that it lands on... (R = red, B = blue, G = green, Y = yellow)



(a) red

Answer:

(b) blue

Answer:

(c) green or yellow

Answer:

- 8 A bag has 10 counters. 3 are red and 7 are blue. One counter is picked at random. Write down $P(\text{red})$ as a fraction and as a decimal.

Answer:

- 9 A letter is chosen at random from the word MATHEMATICS. Find the probability that the letter is...

(a) M

Answer:

(b) a vowel (A, E, I, O or U)

Answer:

(c) T or C

Answer:

(d) Z

Answer:

10 A card is taken at random from a standard pack of 52 playing cards. Find the probability that it is...

(a) a heart

Answer:

(b) a king

Answer:

(c) a red queen

Answer:

(d) a picture card (jack, queen or king)

Answer:

(e) the ace of spades

Answer:

11 A number is chosen at random from the whole numbers 1 to 20. Find the probability that the number is...

(a) a multiple of 5

Answer:

(b) a square number

Answer:

(c) a factor of 20

Answer:

(d) a prime number

Answer:

12 A raffle sells 250 tickets and one ticket is drawn as the winner. Sam bought 10 tickets and Tia bought 15 tickets. Find the probability that...

(a) Sam wins

Answer:

(b) Tia wins

Answer:

(c) Sam or Tia wins

Answer:

13 Here are four events. A: a fair coin lands on heads. B: a fair die lands on 6. C: a fair die lands on a number less than 5. D: a letter chosen at random from the 12 months is the first letter J (January, June, July). Write A, B, C and D in order, starting with the **least** likely.

Answer:

14 Ben says: "The probability that it rains tomorrow is $\frac{1}{2}$ because it either rains or it does not." Explain why Ben is wrong.

Answer:

- 15** Zara says: "The probability of rolling a 6 is $\frac{1}{6}$, so if I roll a die 6 times I must get exactly one 6." Is Zara correct? Give a reason.

Answer:

- 16** Jack says: "A bag has 3 red counters and 1 blue counter. There are two colours, so the probability of blue is $\frac{1}{2}$." Explain Jack's mistake and write the correct probability.

Answer:

- 17** A fair spinner has 12 equal sections. 3 sections are red, 4 sections are blue and the rest are green. Work out...

(a) Number of green sections

Answer:

(b) $P(\text{green})$

Answer:

- 18** A bag contains only red counters and blue counters. There are 3 red counters. The probability of picking a red counter is $\frac{1}{5}$. How many blue counters are in the bag?

Answer:

- 19** Explain why the number 1.2 cannot be the probability of an event.

Answer: