

Writing Probability

Practice Worksheet (Foundation Tier)

I DO

There are 12 counters in a bag.

- 5 of the counters are red.
- 4 of the counters are blue.
- The rest of the counters are green.

A counter is taken at random from the bag.

Work out the probability that the counter is **not** blue.

WE DO

There are 15 counters in a box.

- 7 of the counters are yellow.
- 3 of the counters are pink.
- The rest of the counters are black.

A counter is chosen at random.

Work out the probability that the counter is **not** yellow.



mygrade9
mathstutor.com

Boost Your Skills & Grades in Grade 9 Maths

YOU DO 1

There are 20 marbles in a bag.

- 8 of the marbles are green.
- 5 of the marbles are white.
- The rest of the marbles are red.

A marble is chosen at random.

Work out the probability that the marble is **not** white.

YOU DO 2

There are 25 buttons in a jar.

- 10 of the buttons are purple.
- 6 of the buttons are orange.
- The rest of the buttons are grey.

A button is chosen at random.

Work out the probability that the button is **not** grey.



CHALLENGE

A bag contains red, blue, and green counters.

The probability of picking a red counter is $\frac{1}{4}$.

The probability of picking a blue counter is $\frac{2}{5}$.

There are 14 green counters.

Work out the total number of counters in the bag.

PRACTICE PERFECT

Work out the following probability problems. Show your working.

1. A letter is chosen at random from the word PROBABILITY. Find the probability that the letter is a B.
2. There are 30 sweets in a bag. 12 are strawberry, 8 are lemon, and the rest are orange. A sweet is taken at random. Find the probability it is orange.
3. The probability that a biased coin lands on heads is 0.65. Write down the probability that the coin lands on tails.
4. Cards numbered 1 to 20 are placed in a box. One card is drawn at random. Find the probability that the number on the card is a multiple of 4.
5. A spinner has sections coloured red, blue, and green. The probability it lands on red is 0.3. The probability it lands on blue is 0.45. Find the probability it lands on green.
6. In a class of 32 students, 14 have a cat, 10 have a dog, and the rest have no pets. A student is chosen at random. Work out the probability that they have no pets.



ANSWERS & WORKED SOLUTIONS

I Do

Step 1: Find the number of counters that are NOT blue.

Total = 12. Blue = 4. Not blue = $12 - 4 = 8$.

(Alternatively, Green = $12 - 5 - 4 = 3$. Not blue = Red + Green = $5 + 3 = 8$).

Step 2: Write as a probability (fraction). 8 out of 12.

Answer: $\frac{8}{12}$ (or $\frac{2}{3}$)

We Do

Step 1: Find the number of counters that are NOT yellow.

Total = 15. Yellow = 7. Not yellow = $15 - 7 = 8$.

Step 2: Write as a probability (fraction). 8 out of 15.

Answer: $\frac{8}{15}$

You Do 1

Step 1: Find the number of marbles that are NOT white.

Total = 20. White = 5. Not white = $20 - 5 = 15$.

Step 2: Write as a probability (fraction). 15 out of 20.

Answer: $\frac{15}{20}$ (or $\frac{3}{4}$)

You Do 2

Step 1: Find the number of buttons that are NOT grey.

The ones that are not grey are purple and orange: $10 + 6 = 16$.

Step 2: Write as a probability (fraction). 16 out of 25.

Answer: $\frac{16}{25}$



Challenge

Step 1: Find the combined probability of Red and Blue.

$$P(\text{Red or Blue}) = \frac{1}{4} + \frac{2}{5} = \frac{5}{20} + \frac{8}{20} = \frac{13}{20}.$$

Step 2: Find the probability of Green.

$$P(\text{Green}) = 1 - \frac{13}{20} = \frac{7}{20}.$$

Step 3: Relate the fraction to the amount.

$\frac{7}{20}$ of the bag is 14 counters. So 7 parts = 14.

1 part = 2 counters. 20 parts = 40 counters.

Answer: 40

Practice Perfect

1. The word has 11 letters. There are two 'B's. Probability = $\frac{2}{11}$
2. Orange sweets = $30 - 12 - 8 = 10$. Probability = $\frac{10}{30}$ (or $\frac{1}{3}$)
3. Probability = $1 - 0.65 = \mathbf{0.35}$
4. Multiples of 4 are: 4, 8, 12, 16, 20 (5 numbers). Probability = $\frac{5}{20}$ (or $\frac{1}{4}$)
5. Probability = $1 - (0.3 + 0.45) = 1 - 0.75 = \mathbf{0.25}$
6. No pets = $32 - 14 - 10 = 8$. Probability = $\frac{8}{32}$ (or $\frac{1}{4}$)



mygrade9
mathstutor.com

Boost Your Skills & Grades in Grade 9 Maths