Expected Outcomes

ANSWERS

1

The probability that a fair dice lands on 4 is $\frac{1}{6}$. The dice is rolled 48 times.

How many times would you expect it to land on 4?

expected = probability × number of trials

$\frac{1}{6}$ × 48 = 8

probability trials expected

Answer 8 times

2

The probability that a rose cutting grows roots is $\frac{3}{4}$. Priya plants 36 cuttings.

How many would you expect to grow roots?

$\frac{3}{4}$ × 36 = 27

probability trials expected

Answer 27 cuttings

3

The probability that a phone battery is faulty is 0.04. A factory makes 900 batteries. How many would you expect to be faulty?

0.04 × 900 = 36

probability trials expected

Answer 36 batteries

4

The probability that a student at a school is left handed is 12%. The school has 650 students. How many would you expect to be left handed?

12% = 0.12

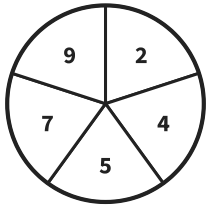
0.12 × 650 = 78

probability trials expected

Answer 78 students

5

This fair spinner is spun 120 times.
How many times would you expect it to land on an even number?



$P(\text{even}) = \frac{2}{5}$, $\frac{2}{5}$ × 120 = 48

Answer 48 times

6

Sam throws a paper cup 50 times.
It lands on its side 32 times.
Estimate how many times it would land on its side in 400 throws.

32 ÷ 50 = 0.64, 0.64 × 400

Answer 256 times

7

At a school fair, a lucky dip costs £1 a go. The probability of winning a £5 prize is $\frac{1}{8}$. 200 people have a go.

How much profit would the school expect to make?

25 winners, £200 – £125

Answer £75

8

The probability that a train is late is 0.1. 70 trains run on Monday. Ruby works out how many trains she would expect to be on time. She says 7. Explain what Ruby has done wrong. Then find the right answer.

7 are late, 70 – 7

Answer 63 trains

Expected Outcomes *further practice*

ANSWERS

9

The probability that a customer at a café pays by card is $\frac{7}{8}$.

320 customers visit the café.

How many would you expect to pay by card?

320 ÷ 8 × 7

Answer *280 customers*

10

The probability that a flight is delayed is 8%. An airport has 450 flights on Friday. How many would you expect not to be delayed?

0.08 × 450 = 36 delayed, 450 – 36

Answer *414 flights*

11

A spinner can land on red, blue or green. It is spun 80 times.

How many times would you expect it to land on green?

Colour	Red	Blue	Green
Probability	0.3	0.45	*0.25*

1 – 0.3 – 0.45 = 0.25, 0.25 × 80

Answer *20 times*

12

Leah spins a spinner 60 times.

Her results are in the table.

Estimate how many times it would land on 3 in 500 spins.

Number	1	2	3
Frequency	12	21	27

27 ÷ 60 = 0.45, 0.45 × 500

Answer *225 times*

13

Zainab plays a game 60 times.

The probability that she wins is 0.35.

Tomasz plays a different game 64 times.

The probability that he wins is $\frac{3}{8}$.

Who would you expect to win more games? Show how you know.

Zainab *21 wins*

Tomasz *24 wins*

Answer *Tomasz*

14

A charity game costs £2 a go.

The probability of winning £10 is 0.15.

120 people play. Would the charity expect to make a profit?

Show how you know.

18 winners, £240 – £180

Answer *Yes, £60 profit*

15

Ola rolls a fair dice. She expects to get 35 sixes. How many times does she plan to roll the dice?

out of 6 rolls, expect 1 six, 35 × 6

Answer *210 times*

16

Kwame flips a coin 50 times and gets 31 heads. He says, "I expected 25 heads, so the coin must be biased."

Is he right? Explain.

25 is expected, not a promise

Answer *No*