

1

The table shows the probabilities for a spinner. Find x .

Outcome	red	blue	green
Probability	0.4	x	$2x$

Add $0.4 + x + 2x = 1$

Simplify $3x + 0.4 = 1$

$x = 0.2$

$x = 0.2$

Answer

2

The table shows the probabilities for a spinner. Find x .

Outcome	A	B	C	D
Probability	0.1	$3x$	x	0.3

Add $0.1 + 3x + x + 0.3 = 1$

Simplify $4x + 0.4 = 1$

$x = 0.15$

$x = 0.15$

Answer

3

The table shows the probabilities for a spinner. Find x .

Outcome	A	B	C	D
Probability	x	$x + 0.1$	0.3	$2x + 0.2$

Add $x + (x + 0.1) + 0.3 + (2x + 0.2) = 1$

Simplify $4x + 0.6 = 1$

$x = 0.1$

$x = 0.1$

Answer

4

The table shows the probabilities for a spinner. Find x .

Outcome	1	2	3	4
Probability	$2x$	0.25	$x - 0.05$	0.35

$x = 0.15$

$x = 0.15$

Answer

5

A counter is taken from a bag. Find the probability it is not blue.

Colour	red	blue	green
Probability	0.2	x	$3x$

$4x = 0.8, x = 0.2$, then $1 - 0.2$

0.8

Answer

6

This spinner is spun 200 times. How many times would you expect it to land on B?

Outcome	A	B	C	D
Probability	0.1	$2x$	x	0.3

$x = 0.2$, so $P(B) = 0.4$, then 0.4×200

80

Answer

7

Find x . Give your answer as a fraction.

Outcome	A	B	C
Probability	$\frac{1}{5}$	$2x$	x

$3x = \frac{4}{5}$

$x = \frac{4}{15}$

Answer

8

A bag holds these counters. The probability of taking a green counter is $\frac{1}{4}$. Find x .

Colour	red	blue	green
Number	x	$2x$	15

15 out of $3x + 15$ is a quarter, so $3x + 15 = 60$

$x = 15$

Answer

Probability and algebra *further practice*

9

Find x .

Outcome	Probability
1	0.05
2	x
3	x
4	$2x$
5	0.15

$4x + 0.2 = 1$

$x = 0.2$

Answer

10

The probabilities are given as percentages. Find the probability of C.

Outcome	A	B	C
Probability	25%	$x\%$	$2x\%$

$3x = 75$, so $x = 25$

50%

Answer

11

A bag holds red, blue and green counters. $P(\text{green}) = 0.4$. A blue counter is twice as likely as a red one. Find $P(\text{blue})$.

Colour	red	blue	green
Probability			0.4

red x , blue $2x$: $3x = 0.6$

0.4

Answer

12

The probability of taking a green counter is $\frac{1}{3}$. How many counters are in the bag?

Colour	red	blue	green
Number	x	$x + 4$	$2x$

$2x$ out of $4x + 4$ is a third, so $x = 2$

12

Answer

13

This dice is biased. It is rolled 300 times. How many sixes would you expect?

Score	Probability
1	0.15
2	0.15
3	0.15
4	0.15
5	0.15
6	x

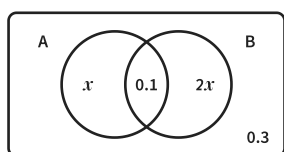
$x = 1 - 0.75 = 0.25$

75

Answer

14

The Venn diagram shows probabilities. Find $P(A)$.



$3x + 0.4 = 1, x = 0.2$, then $0.2 + 0.1$

0.3

Answer

15

The probability of taking a blue counter is $\frac{3}{4}$. How many counters are in the bag?

Colour	red	blue
Number	x	$2x + 5$

$4(2x + 5) = 3(3x + 5)$, so $x = 5$

20

Answer

16

Explain why these cannot be the probabilities for a spinner.

Outcome	A	B	C	D
Probability	0.4	x	$2x$	0.7

$0.4 + 0.7$ is already more than 1

x would be negative

Answer