

Chance Experiments

How many times would you expect each result?

1.

Example



Flip a coin **20** times.

Heads 10

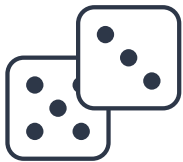
2.



Flip a coin **50** times.

Tails _____

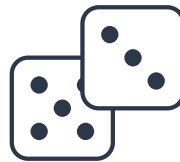
3.



Roll a die **60** times.

Sixes _____

4.



Roll a die **60** times.

Even numbers _____

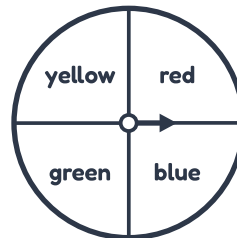
5.



Roll a die **120** times.

Less than 3 _____

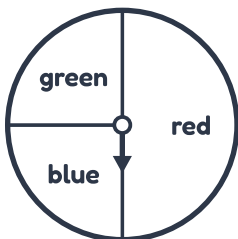
6.



Spin it **80** times.

Blue _____

7.

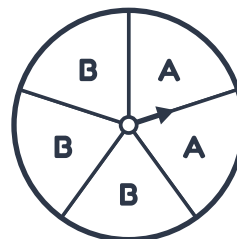


Spin it **40** times.

Red _____

Blue _____

8.



Spin it **50** times.

A _____

B _____

Chance Experiments

Count each tally. Write the result as a fraction, a decimal and a percentage.

1. A spinner with 5 equal parts, numbered 1 to 5, was spun 50 times.

Example

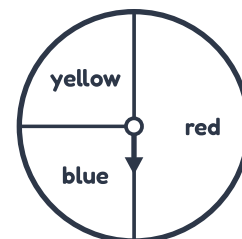
Number	Tally	Count	Fraction	Decimal	Percentage
1		13	$\frac{13}{50}$	0.26	26%
2					
3					
4					
5					

Expected for each number: _____ times, which is _____

Which number was furthest from what was expected? _____

2. This spinner was spun 20 times.

Colour	Tally	Count	Fraction	Decimal	Percentage
red					
blue					
yellow					



Expected: red _____ blue _____ yellow _____

Which colour was furthest from what was expected? _____

Chance Experiments

Fill in each table. Which result is closest to what was expected?

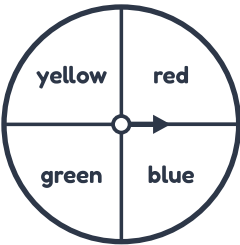
1. Jack flipped a coin and counted the heads. Example

Flips	Heads	Fraction of flips	Decimal	Difference from 0.5
10	7	$\frac{7}{10}$	0.7	0.2
50	22			
100	53			
500	246			

Closest to what was expected: after _____ flips

2. Zara spun this spinner and counted the reds.

Spins	Reds	Fraction of spins	Decimal	Difference from 0.25
10	4			
50	9			
100	28			
500	121			



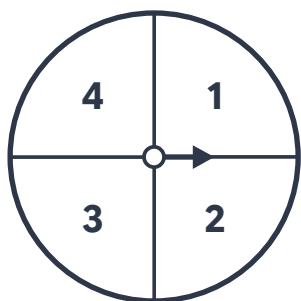
Closest to what was expected: after _____ spins

3. Why are the results after 500 trials the closest? Circle the best reason.
- A The more trials, the closer the results usually get to what is expected.
 - B After many trials, each result takes its turn.
 - C Results always match what is expected after 100 trials.

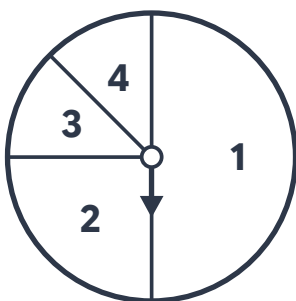
Chance Experiments

Which spinner or die made each set of results? Write its letter.

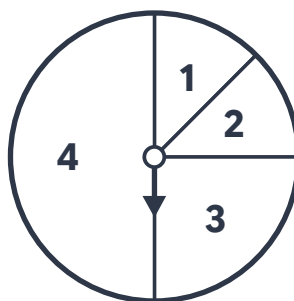
Spinner A



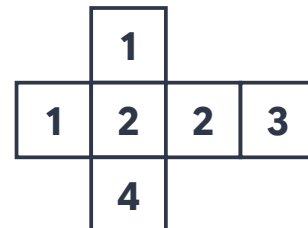
Spinner B



Spinner C



The net of die D



1. 240 spins or rolls

Example

Number	1	2	3	4
Times	128	57	27	28

Made by: B

2. 240 spins or rolls

Number	1	2	3	4
Times	82	79	41	38

Made by:

3. 240 spins or rolls

Number	1	2	3	4
Times	58	63	61	58

Made by:

4. 240 spins or rolls

Number	1	2	3	4
Times	29	33	59	119

Made by:

5. Which one is fair, with every number equally likely?

6. How many 1s would you expect in 240 rolls of die D?

Chance Experiments

Use the results to estimate the chance. Then predict.

1. A spinner landed on red **31** times in **100** spins. About how many reds would you expect in the next **400** spins?

Example

Relative frequency: 0.31 Prediction: about 124 reds

2. A bottle top landed upside down **18** times in **50** flips. About how many times would it land upside down in **200** flips?

Relative frequency: _____ Prediction: about _____ times

3. A paper cup landed on its side **70** times in **100** drops. About how many times would it land on its side in **500** drops?

Relative frequency: _____ Prediction: about _____ times

4. A drawing pin landed point up **12** times in **40** drops. About how many times would it land point up in **300** drops?

Relative frequency: _____ Prediction: about _____ times

5. Leo took a counter from a bag and put it back, **80** times. It was green **20** times. About how many greens in **200** more?

Relative frequency: _____ Prediction: about _____ greens

6. A spinner landed on blue **48** times in **150** spins. About how many blues would you expect in **600** spins?

Relative frequency: _____ Prediction: about _____ blues

7. Two groups spun the same spinner **100** times each. One got **34** reds and the other got **27**. What is the relative frequency of red for both groups together?

Both groups together: _____

Which gives the better estimate? **one group** **both groups**

Chance Experiments

How many times would you expect each result?

1.

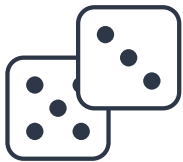
Example

Flip a coin **20** times.Heads 10

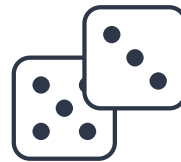
2.

Flip a coin **50** times.Tails 25

3.

Roll a die **60** times.Sixes 10

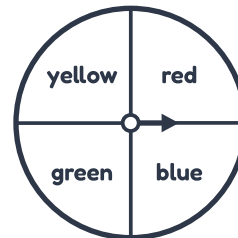
4.

Roll a die **60** times.Even numbers 30

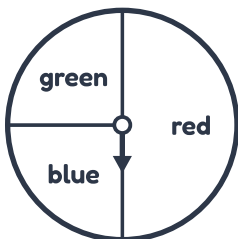
5.

Roll a die **120** times.Less than 3 40

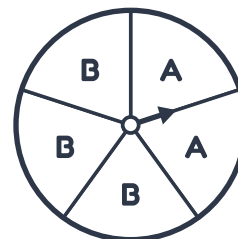
6.

Spin it **80** times.Blue 20

7.

Spin it **40** times.Red 20Blue 10

8.

Spin it **50** times.A 20B 30

Chance Experiments

Count each tally. Write the result as a fraction, a decimal and a percentage.

1. A spinner with 5 equal parts, numbered 1 to 5, was spun 50 times.

Example

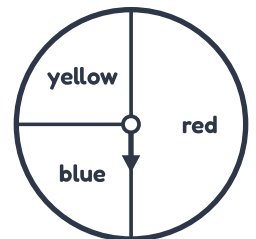
Number	Tally	Count	Fraction	Decimal	Percentage
1		13	$\frac{13}{50}$	0.26	26%
2		8	$\frac{8}{50}$	0.16	16%
3		11	$\frac{11}{50}$	0.22	22%
4		9	$\frac{9}{50}$	0.18	18%
5		9	$\frac{9}{50}$	0.18	18%

Expected for each number: 10 times, which is 20%

Which number was furthest from what was expected? 1

2. This spinner was spun 20 times.

Colour	Tally	Count	Fraction	Decimal	Percentage
red		11	$\frac{11}{20}$	0.55	55%
blue		3	$\frac{3}{20}$	0.15	15%
yellow		6	$\frac{6}{20}$	0.3	30%



Expected: red 10 blue 5 yellow 5

Which colour was furthest from what was expected? blue

Chance Experiments

Fill in each table. Which result is closest to what was expected?

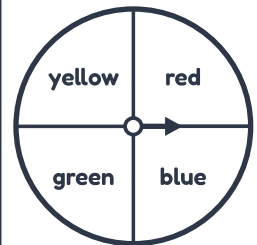
1. Jack flipped a coin and counted the heads. Example

Flips	Heads	Fraction of flips	Decimal	Difference from 0.5
10	7	$\frac{7}{10}$	0.7	0.2
50	22	$\frac{22}{50}$	0.44	0.06
100	53	$\frac{53}{100}$	0.53	0.03
500	246	$\frac{246}{500}$	0.492	0.008

Closest to what was expected: after 500 flips

2. Zara spun this spinner and counted the reds.

Spins	Reds	Fraction of spins	Decimal	Difference from 0.25
10	4	$\frac{4}{10}$	0.4	0.15
50	9	$\frac{9}{50}$	0.18	0.07
100	28	$\frac{28}{100}$	0.28	0.03
500	121	$\frac{121}{500}$	0.242	0.008



Closest to what was expected: after 500 spins

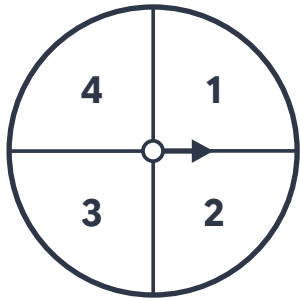
3. Why are the results after 500 trials the closest? Circle the best reason.

- ☒ A The more trials, the closer the results usually get to what is expected.
☐ B After many trials, each result takes its turn.
☐ C Results always match what is expected after 100 trials.

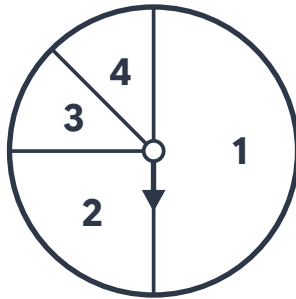
Chance Experiments

Which spinner or die made each set of results? Write its letter.

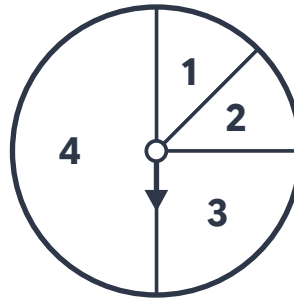
Spinner A



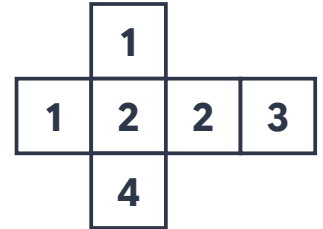
Spinner B



Spinner C



The net of die D



1. 240 spins or rolls

Example

Number	1	2	3	4
Times	128	57	27	28

Made by: B

2. 240 spins or rolls

Number	1	2	3	4
Times	82	79	41	38

Made by: D

3. 240 spins or rolls

Number	1	2	3	4
Times	58	63	61	58

Made by: A

4. 240 spins or rolls

Number	1	2	3	4
Times	29	33	59	119

Made by: C

5. Which one is fair, with every number equally likely? A

6. How many 1s would you expect in 240 rolls of die D? 80

Chance Experiments

Use the results to estimate the chance. Then predict.

1. A spinner landed on red **31** times in **100** spins. About how many reds would you expect in the next **400** spins?

Example

Relative frequency: 0.31 Prediction: about 124 reds

2. A bottle top landed upside down **18** times in **50** flips. About how many times would it land upside down in **200** flips?

Relative frequency: 0.36 Prediction: about 72 times

3. A paper cup landed on its side **70** times in **100** drops. About how many times would it land on its side in **500** drops?

Relative frequency: 0.7 Prediction: about 350 times

4. A drawing pin landed point up **12** times in **40** drops. About how many times would it land point up in **300** drops?

Relative frequency: 0.3 Prediction: about 90 times

5. Leo took a counter from a bag and put it back, **80** times. It was green **20** times. About how many greens in **200** more?

Relative frequency: 0.25 Prediction: about 50 greens

6. A spinner landed on blue **48** times in **150** spins. About how many blues would you expect in **600** spins?

Relative frequency: 0.32 Prediction: about 192 blues

7. Two groups spun the same spinner **100** times each. One got **34** reds and the other got **27**. What is the relative frequency of red for both groups together?

Both groups together: 0.305

Which gives the better estimate? one group both groups