



14 Probability



Example

Hannah has 3 shirts – red, white and yellow, and 2 skirts – blue and grey. Her different possible outfits can be shown by using a “tree diagram”.

Shirt	Skirt	Outfit
red (R)	blue (B)	RB
	grey (G)	RG
white (W)	blue (B)	WB
	grey (G)	WG
yellow (Y)	blue (B)	YB
	grey (G)	YG

There are 6 possible outfits.

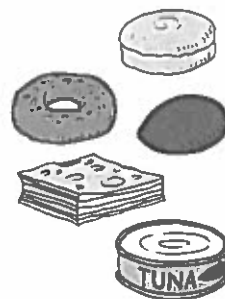
The probability that Hannah will choose a yellow shirt is $\frac{2}{6}$ ($\frac{1}{3}$ or 1 out of 3).

The probability that Hannah will choose a red shirt and a blue skirt is $\frac{1}{6}$ (1 out of 6).

Help Cindy find out the possible choices of poppy seed or sesame seed bagel that may have the filling of tuna (T), egg (E), or cheese (C).

- ① Complete the tree diagram to show her choices for lunch.

Bagel	Filling	Combination
Poppy seed (P)		
Sesame seed (S)		



- ② How many possible combinations are there for the lunch? _____
- ③ What is the probability that she will have a sesame seed bagel? _____
- ④ What is the probability that she will have tuna on her bagel? _____
- ⑤ What is the probability that she will have a sesame seed bagel with tuna? _____

Draw lines to join each of the following events to the probability associated with it.

Event	Probability
⑥ Snow falls in Montreal in January.	$\frac{1}{10}$
⑦ Snow falls in Florida in March.	$\frac{9}{10}$
⑧ Snow falls in Toronto in March.	$\frac{1}{100}$

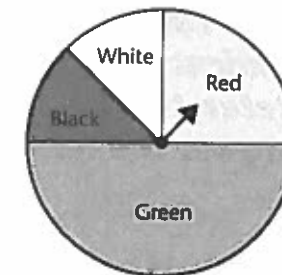


Quick Tip

Probability can be written as fractions with the total possible outcomes as the denominator and the number of outcomes of a particular event as the numerator. The more probable the event, the larger the fraction is.

Stephen spins the spinner shown. Help him solve the problems.

- ⑨ What colour is the spinner most likely to land on? _____



- ⑩ Which colours is the spinner equally likely to land on? _____

- ⑪ What is the probability that the spinner will land on red? _____

- ⑫ What is the probability that the spinner will land on green? _____

- ⑬ What is the probability that the spinner will land on green or red? _____

- ⑭ If Stephen spins the spinner 100 times, how many times is it likely to land on red or green? _____

Sarah rolls two dice and adds the numbers that come up. Use her results to solve the problems.

- ⑮ Complete the table to show all the possible sums.

+	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						



Quick Tip

Addition table

+	1	2	3
1			
2			
3			

1 + 2 = 3
3 + 1 = 4



- ⑯ How many possible sums are there? _____

- ⑰ How many different sums are possible? _____

- ⑱ Which sum is most likely to come up? What is the probability to get this sum? _____ ; _____

- ⑲ Which sums are least likely to come up? What is the probability to get each sum? _____ ; _____

- ⑳ Which sum is as likely to get as 9? _____