Learn About

Determining Probability and Averages: Probability

Probability is the chance or likelihood that an event will occur. The probability of an event occurring is found by comparing the desired event to the total number of possible events. Probability can be represented as a fraction or as a percentage.

To find the probability of picking a pin with a fish design, first find the total number of pins. Then divide the number of pins with fish designs by the total number of pins. You can write the probability as a fraction or as a percentage.

Pins

Design	Number
Heart	11
Sun	13
Fish	12
Flower	4

Fraction:

Number of fish pins: 12

Total number of pins: 40

Probability: $\frac{12}{40} = \frac{3}{10}$

Percentage:

$\frac{3}{10} = 10\overline{)3.0}$

$0.3 \times 100 = 30\%$

Lynn is moving into a new house with her family. She has all of her DVDs packed in a box. What is the probability of picking an action movie out of the box? Write your answer as a fraction and as a percentage.

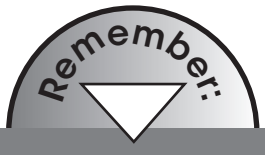
DVDs

Type of Movie	Number
Comedy	12
Action	10
Mystery	15
Cartoon	13

There are 10 action movies and 50 DVDs in all.

$\frac{10}{50} = \frac{1}{5} = 20\%$

The probability of picking an action movie is $\frac{1}{5}$ or **20%.**



Probability is the chance or likelihood that an event will occur. The probability of an event occurring is found by comparing the desired event to the total number of possible events.

Look at the answer choices for each question. Read why each answer choice is correct or not correct.

1. What was the average number of campers at the park for the last eight days?

Ⓐ 8 campers

This is not correct. There are 160 campers total and 8 days. 160 ÷ 8 = 20, not 8.

Ⓑ 15 campers

This is not correct. There are 160 campers total and 8 days. 160 ÷ 8 = 20, not 15.

● 20 campers

This is correct. There are 160 campers total and 8 days. 160 ÷ 8 = 20

Ⓓ 160 campers

This is not correct. There are 160 campers total and 8 days. 160 ÷ 8 = 20, not 160.

2. Ms Crawford writes the total number of campers at the park each day on index cards. She keeps the cards in a box. If a person selects a card at random from the box, what is the probability of picking a card with a number greater than 20?

Ⓐ $\frac{1}{4}$

This is not correct. There are 8 cards total and 3 of them have numbers greater than 20. The probability is $\frac{3}{8}$, not $\frac{1}{4}$.

● $\frac{3}{8}$

This is correct. There are 8 cards total and 3 of them have numbers greater than 20. The probability is $\frac{3}{8}$.

Ⓒ $\frac{1}{2}$

This is not correct. There are 8 cards total and 3 of them have numbers greater than 20. The probability is $\frac{3}{8}$, not $\frac{1}{2}$.

Ⓓ $\frac{5}{8}$

This is not correct. There are 8 cards total and 3 of them have numbers greater than 20. The probability is $\frac{3}{8}$, not $\frac{5}{8}$.

Lesson 3

Read the passage.
Then do Numbers 1–5.

Basketball Practice

Victoria wanted to join the basketball team at school. In order to join the team, she had to try out. For two weeks, Victoria practised dribbling and shooting free throws. She was nervous but looked forward to the tryouts.

During the tryouts the coach had Victoria and the other girls run sprints, shoot lay-ups and do some passing drills. They also had to shoot lots of free throws. Victoria was glad that she had practised so much!

1. Victoria had to shoot 5 sets of 10 free throws. For these sets of 10, she made 7, 8, 5, 7 and 3 free throws. What was the average number of free throws she made per set of 10?

Ⓐ 5 free throws
Ⓑ 5.5 free throws
Ⓒ 6 free throws
Ⓓ 7 free throws

2. Victoria tried 20 lay-ups. She made 17 of them. Based on this information, what is the probability that Victoria will make her next lay-up?

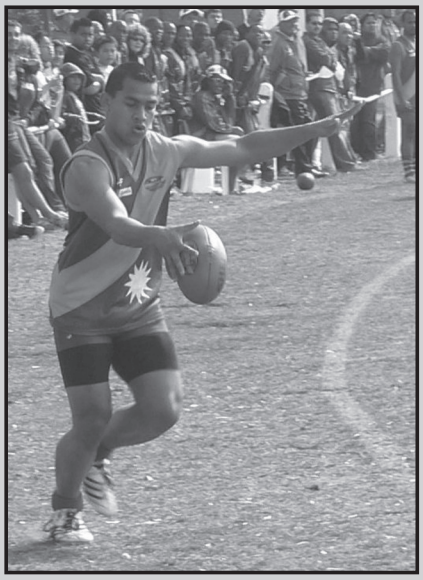
Ⓐ 17%
Ⓑ 20%
Ⓒ 85%
Ⓓ 97%

Lesson 10

Read the passage.
Then do Numbers 1–5.

The Goalkicker

Anthony Price is a football player. He is the full-forward for the Eaglehawke Eagles. Anthony is his team's best goalkicker, and the most accurate kick. When the game is close, the midfielders try and pass the ball to him so he can have a shot. Anthony likes kicking goals!



1. In the last five games, Anthony kicked 5, 3, 8, 0 and 4 goals. What was the average number of goals he kicked per game for those five games?

Ⓐ 4 goals
Ⓑ 8 goals
Ⓒ 11 goals
Ⓓ 20 goals

2. Last season, Anthony kicked 112 goals in 16 games. How many goals did he average per game?

Ⓐ 4.5 goals
Ⓑ 5 goals
Ⓒ 6.5 goals
Ⓓ 7 goals

Self-Assessment 2
Lessons 6–10

Answer these questions after you have completed Lessons 6–10. Before you begin, re-read what you wrote in Self-Assessment 1.

FOCUS on Determining Probability and Averages, Book E

Name _____ Date _____

1. Rate your work in Lessons 6–10. Circle your answer.

   successful somewhat successful needs improvement

2. Did any of the questions give you trouble? _____
   If so, what kind of trouble did you have?

   _____

   _____

   Is this the same kind of trouble you had in Lessons 1–5? _____

3. Did you find the questions easier or more difficult than those in Lessons 1–5?

   _____

   Why do you think this is so?

   _____

   _____

4. Did you meet the goal you set for yourself for Lessons 6–10? _____
   Why or why not?

   _____

   _____

5. What is your goal for Lessons 11–15?

   _____

   _____

Cut along the dotted line.