Prerequisite Practice 4.5.1: Calculating Expected Value

Find the expected value of winnings for each game.

1. Juan is playing a game in which he can win \$100 with probability 0.1, \$200 with probability 0.2, or \$300 with probability 0.7. What is the expected value of Juan's winnings?

2. Marina is playing a game in which she needs to throw a ball into a bucket. If she throws the ball into the bucket, she will win \$100; if not, she will win \$0. The probability that Marina will throw the ball into the bucket is 0.2. What is the expected value of Marina's winnings?

3. Linda estimates the number of questions she answered correctly on a test. She answered 10 correctly with probability 0.6, 20 correctly with probability 0.3, and 50 correctly with probability 0.1. What is the expected value of the number of questions Linda answered correctly?

4. Mara is playing a game. There are two marbles in a bag. If she chooses the purple marble, she will win \$10. If she chooses the orange marble, she will win \$200. What is the expected value of Mara's winnings from the game?

5. Benjamin plays a game in which he will win 110 points with probability 0.6 and 120 points with probability 0.4. What is the expected number of points that he will win by playing the game?

Prerequisite Practice 4.4.1: Calculating Expected Value

Find the expected value of winnings for each game.

1. Jennifer is playing a game at an amusement park. There is a 0.1 probability that she will score 10 points, a 0.2 probability that she will score 20 points, and a 0.7 probability that she will score 30 points. How many points can Jennifer expect to receive by playing the game?

2. Luanda played a game in which she could win 10 points with a probability of 0.2. There is a 0.8 probability that she will not win any points. How many points can Luanda expect to win?

3. Rudy is purchasing a toaster. Of the toasters in the store, 70% cost $10, 20% cost $20, and 10% cost $50. How much can Rudy expect to pay for a toaster?

4. Half of the players of a game win 100 points, and the other half win 200 points. How many points can Edie expect to win if she plays the game?

5. Matt wants to purchase a book at Jo's Bookshop. Of the books in the shop, 60% cost $10 and 40% cost $12. How much can Matt expect to pay for a book at Jo's Bookshop?