

Name:

Partners:

Statistics

Date:

Review 4 Version A

[A] Circle whether each statement is true or false.

T F 1. $$.25 = .25\text{¢}$

T F 2. "Odd" and "less than 4" are mutually exclusive.

T F 3. If drawing a heart will win \$2, the expected value is 50¢.

T F 4. The probability of a card being red, given it is hearts, is 50%.

T F 5. The sample space for flipping two coins is HH, HT, TH, and TT.

T F 6. The probability that two random cards are a king and a queen is $\frac{4}{52} \times \frac{3}{51}$.

T F 7. Part [D] involves independent events, and part [E] involves dependent events.

T F 8. The complement of "all of the cards are spades" is "none of the cards are spades."

T F 9. If five cards are drawn, the probability that one of them is the jack of spades is $\frac{1}{52}$.

[B] James pays \$10 to roll 2 six-sided dice.

1. If the first die rolls a 1, he wins \$30. If both dice roll a 6, he wins \$100. Calculate his expected value.

[C] Use choose to calculate the size of the sample space for each of the following situations.

1. Out of four dice, three roll a 1.

2. The digits of the number 6,880,999 are written in random order.

3. Jake splits his 12 employees into a group of 4 for the day shift, a group of 4 for the night shift, and a group of 4 for the swing shift.

[D] Lanie rolls four 4-sided dice, making a prediction for each. Calculate the probability of each of the following without reducing or using decimals or percents.

1. Exactly three of her predictions are correct.
2. At least one of her predictions is correct.
3. At least three of her predictions are correct.

[E] Of the 19 contestants in a talent show, 7 are singers, 4 are gymnasts, and 8 are dancers. Four contestants in each category are children. Calculate the following probabilities, given the acts are in random order. Do not reduce or use decimals or percents.

1. The last act is a singer.
2. The first act is a singer or a child.
3. The first act is a child, given it is a singer.
4. The first 2 acts are both children or both adults.
5. One or both of the first two acts is a singer.
6. Exactly 2 of the first 5 acts are singers.

[F] Optional.

1. Arizona is dealt five cards. Calculate the probability of each of the following.
 - a) a flush
 - b) a royal flush