

Name:

Partners:

Math Academy I

Date:

Review 6 Version A

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

T F 1. $P(L \cup L') = 1$

T F 2. $|H' \cup F'| = |(H \cap F)'|$

T F 3. "Odd" and "less than 4" are mutually exclusive.

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

T F 5. There are 15 possible ways for four out of six dice to roll a 1.

T F 6. The sample space for flipping two coins is HH, HT, TH, and TT.

T F 7. There are over a billion different possible orders for a line of 14 people.

T F 8. When drawing two cards, the probability that the second card is an ace is $\frac{4}{51}$.

T F 9. Part [C] involves independent events, and part [D] involves dependent events.

T F 10. The complement of "all of the cards are spades" is "none of the cards are spades."

T F 11. If a die is rolled three times, the probability that it lands on the same number each time is $\frac{1}{216}$.

T F 12. Out of two cards, if the second card was clubs, the probability that the first card was clubs is $\frac{12}{51}$.

[B] Last month 9000 chips made by Wutronics were made in America and 3000 were made overseas. 8500 of the American chips and 2500 of the foreign chips met specifications.

1. What percentage of chips were American-made and met specifications?

2. What percentage of chips that met specifications were American-made?

[C] Heather 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. Her first correct prediction is her third roll.
2. Exactly three of her predictions are correct.
3. At least one of her predictions is correct.
4. At least three of her predictions are correct.

[D] This week at Camp Kiesby there are 23 6th graders, 15 7th graders, and 12 8th graders. Ten kids of each grade are girls. Calculate the probability of each of the following without reducing or using decimals or percents.

1. The last kid to show up is a girl or an 8th grader.
2. A random kid is a 6th grader, given she is a girl.
3. Two random kids are in the same grade.
4. Out of three random kids, exactly two are boys.

[E] Do the following to organize your group's reviews.

1. Make sure your name and your partners' names are at the top of your review the first day.
2. Staple the reviews in order, all facing the same way. Put the staple in the very top left corner if everyone is finished or if the review is due; otherwise put the staple in the top right corner.

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Review 6 Version B

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

T F 1. $P(L \cup L') = 1$

T F 2. $|H' \cup F'| = |(H \cap F)'|$

T F 3. "Odd" and "less than 4" are mutually exclusive.

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

T F 5. There are 15 possible ways for four out of six dice to roll a 1.

T F 6. The sample space for flipping two coins is HH, HT, TH, and TT.

T F 7. There are over a billion different possible orders for a line of 14 people.

T F 8. When drawing two cards, the probability that the second card is an ace is $\frac{4}{51}$.

T F 9. Part [C] involves independent events, and part [D] involves dependent events.

T F 10. The complement of "all of the cards are spades" is "none of the cards are spades."

T F 11. If a die is rolled three times, the probability that it lands on the same number each time is $\frac{1}{216}$.

T F 12. Out of two cards, if the second card was clubs, the probability that the first card was clubs is $\frac{12}{51}$.

[B] Forty percent of the chips made by Wutronics are made in America. Ninety percent of their American chips and eighty percent of their foreign chips meet specifications.

1. What percentage of chips are American-made and meet specifications?

2. What percentage of chips that meet specifications are American-made?

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

1. Her first correct prediction is her third roll.
2. Exactly three of her predictions are correct.
3. At least one of her predictions is correct.
4. At least three of her predictions are correct.

[D] This week at Camp Kiesby there are 23 6th graders, 15 7th graders, and 12 8th graders. Ten kids of each grade are girls. Calculate the probability of each of the following without reducing or using decimals or percents.

1. The second kid to show up is a girl or a 7th grader.
2. A random kid is a 7th grader, given she is a girl.
3. Three random kids are in the same grade.
4. Out of four random kids, exactly two are girls.

[E] Bonus. Calculate the following probabilities for five random cards.

1. a flush
2. a royal flush

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Review 6 Version C

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

T F 1. $P(L \cup L') = 1$

T F 2. $|H' \cup F'| = |(H \cap F)'|$

T F 3. "Odd" and "less than 4" are mutually exclusive.

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

T F 5. There are 15 possible ways for four out of six dice to roll a 1.

T F 6. The sample space for flipping two coins is HH, HT, TH, and TT.

T F 7. There are over a billion different possible orders for a line of 14 people.

T F 8. When drawing two cards, the probability that the second card is an ace is $\frac{4}{51}$.

T F 9. Part [C] involves independent events, and part [D] involves dependent events.

T F 10. The complement of "all of the cards are spades" is "none of the cards are spades."

T F 11. If a die is rolled three times, the probability that it lands on the same number each time is $\frac{1}{216}$.

T F 12. Out of two cards, if the second card was clubs, the probability that the first card was clubs is $\frac{12}{51}$.

[B] Thirty-one percent of the chips made by Wutronics are made in America. Ninety-six percent of their American chips and eighty-nine percent of their foreign chips meet specifications.

1. What percentage of chips are American-made and meet specifications?

2. What percentage of chips that meet specifications are American-made?

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

1. Her first correct prediction is her third roll.
2. Exactly three of her predictions are correct.
3. At least one of her predictions is correct.
4. At least three of her predictions are correct.

[D] This week at Camp Kiesby there are 23 6th graders, 15 7th graders, and 12 8th graders. Ten kids of each grade are girls. Calculate the probability of each of the following without reducing or using decimals or percents.

1. The third kid to show up is a boy or an 8th grader.
2. A random kid is an 8th grader, given he is a boy.
3. Three random kids are each in different grades.
4. Four random kids are a 6th, a 7th, and two 8th graders.

[E] Bonus. Calculate the following probabilities for five random cards.

1. no pairs
2. four of a kind

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Review 6 Version D

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

T F 1. $P(L \cup L') = 1$

T F 2. $|H' \cup F'| = |(H \cap F)'|$

T F 3. "Odd" and "less than 4" are mutually exclusive.

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

T F 5. There are 15 possible ways for four out of six dice to roll a 1.

T F 6. The sample space for flipping two coins is HH, HT, TH, and TT.

T F 7. There are over a billion different possible orders for a line of 14 people.

T F 8. When drawing two cards, the probability that the second card is an ace is $\frac{4}{51}$.

T F 9. Part [C] involves independent events, and part [D] involves dependent events.

T F 10. The complement of "all of the cards are spades" is "none of the cards are spades."

T F 11. If a die is rolled three times, the probability that it lands on the same number each time is $\frac{1}{216}$.

T F 12. Out of two cards, if the second card was clubs, the probability that the first card was clubs is $\frac{12}{51}$.

[B] 27% of the chips made by Wutronics are made in America. 99.91% of their American chips and 98.72% of their foreign chips meet specifications.

1. What percentage of chips are foreign-made and do not meet specifications?

2. What percentage of chips that do not meet specifications are foreign-made?

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

1. Her first correct prediction is her third roll.
2. Exactly three of her predictions are correct.
3. At least one of her predictions is correct.
4. At least three of her predictions are correct.

[D] This week at Camp Kiesby there are 23 6th graders, 15 7th graders, and 12 8th graders. Ten kids of each grade are girls. Calculate the probability of each of the following without reducing or using decimals or percents.

1. The fourth kid to show up is a boy or a 7th grader.
2. A random kid is a girl, given she is not a 6th grader.
3. Two random kids are in different grades.
4. Four random kids include at least one of each grade.

[E] Bonus. Calculate the following probabilities for five random cards.

1. a straight
2. a straight flush