

# Mutually Inclusive Exclusive Practice

Name \_\_\_\_\_

Unit 6 - Day 4 Homework

## Mutually Exclusive and Inclusive Events

1. 2 dice are tossed. What is the probability of obtaining a sum less than 4 or equal to 7?

$$3/36 + 6/36 = 9/36 = 1/4 = .25$$

2. Thomas bought a bag of jelly beans that contained 10 red jelly beans, 15 blue jelly beans, and 12 green jelly beans.

What is the probability of Thomas reaching into the bag and pulling out a blue or green jelly bean?

$$27/37 = .7297 = 72.97\%$$

3. A card is chosen at random from a standard deck of cards. What is the probability that the card chosen is a heart or spade? Are these events mutually exclusive?

$$13/52 + 13/52 = 1/2 \quad \text{Yes, can't be a } \heartsuit \text{ \& a } \spadesuit$$

4. 3 coins are tossed simultaneously. What is the probability of getting 3 heads or 3 tails? Are these events mutually exclusive?

$$(1/2)(1/2)(1/2) + (1/2)(1/2)(1/2) = .25$$

Yes, can't get heads & tails at same time

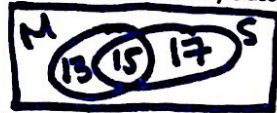
5. Suppose 2 events are mutually exclusive events. If one of the events is randomly choosing a boy from the freshman class of a high school, what could the other event be? Explain your answer.

Senior, different class

choosing a girl, different gender

6. Jack is a student in Bluenose High School. He noticed that a lot of the students in his math class were also in his chemistry class. In fact, of the 60 students in his grade, 28 students were in his math class, 32 students were in his chemistry class, and 15 students were in both his math class and his chemistry class. He decided to calculate what the probability was of selecting a student at random who was either in his math class or his chemistry class, but not both. Draw a Venn diagram and help Jack with his calculation.

$$13/60 + 17/60 = 30/60 = .5$$



7. A card is chosen at random from a standard deck of cards. What is the probability that the card chosen is a heart or a face card? Are these events mutually inclusive? Yes, they are  $\heartsuit$  face cards

$$13/52 + 12/52 - 3/52 = 22/52 = .4231$$

8. What is the probability of choosing a number from 1 to 10 that is greater than 5 or even?

$$5/10 + 5/10 - 3/10 = 7/10$$

9. A bag contains 26 tiles with a letter on each, one tile for each letter of the alphabet. What is the probability of reaching into the bag and randomly choosing a tile with one of the letters in the word ENGLISH on it or randomly choosing a tile with a vowel on it?

$$7/26 + 5/26 - 2/26 = 10/26 = .3846$$

10. Are randomly choosing a teacher and randomly choosing a father mutually exclusive events? Explain your answer.

No, a teacher can be a father