

10.3 Assignment

Let $S = \{0,1,2,3,4,5,6,7,8,9,10\}$; $A = \{0,1,2,3,5,8\}$; $B = \{0,2,4,6\}$; $C = \{1,3,5,7\}$

1. $A \cup B =$

2. $B' =$

3. $A \cap B' =$

4. $B \cup C =$

5. $B \cap C' =$

6. $A' \cup C =$

7. $(A \cup B)' =$

8. What is the sample space for choosing a letter from the word mathematics?

9. You have a spinner that has the numbers 1 to 20 on it.

(a) What is the event that you will spin and land on an odd number or a square number?

(b) Are the events from part (a) mutually exclusive? If they are, explain your reasoning. If not, list the outcomes.

10. What is the sample space of rolling a six-sided die and choosing a marble from a bag that has 1 red, 1 blue, and 1 green marble? List the N-value.

11. What are all the outcomes in the event that you roll an even number and grab a green marble? List the N-value.

12. What are all the outcomes in the event that you roll a number divisible by 3 or grab a marble that is not blue? List the N-value?

Suppose we are playing with a deck of cards. A deck of cards consists of the numbers ace-10, jack, queen, and king, two black suits: clubs and spades, and two red suits: hearts and diamonds. Let A be the event that we choose a card that is a number, let B be the event that we choose a spade, let C be the event that we choose a heart, and let D be the event that we choose a red card. List your cards the following way: jack of diamonds is jD, 2 of spades is 2S, ace of clubs is aC.

Determine if the two events are mutually exclusive, then list the outcomes.

13. $A \cap C$ mutually exclusive? _____

14. $B \cap C$ mutually exclusive? _____

15. $A' \cap D$ mutually exclusive? _____

16. $B \cup C$ mutually exclusive? _____