

Secondary Math 2

9.1 Sets and Conditional Probability

Name _____

Date _____ Period _____

- Onlin
- Hints
- Extra

Set A is the set of factors of 12, set B is the set of even natural numbers less than 13, set C is the set of odd natural numbers less than 13, set D is the set of even natural numbers less than 7. The universal set for these questions is the set of natural numbers less than 13.

So $A = \{1, 2, 3, 4, 6, 12\}$, $B = \{2, 4, 6, 8, 10, 12\}$,

$C = \{1, 3, 5, 7, 9, 11\}$, $D = \{2, 4, 6\}$, and

$U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$. Answer each question.

1. Is $D \subset A$? Explain why or why not.

Yes; each element of D is part of A

2. Is $B \subset A$? Explain why or why not.

3. What is $A \cap B$?

$\{2, 4, 6, 12\}$

4. What is $A \cap C$?

5. What is $A \cup B$?

$\{1, 2, 3, 4, 6, 8, 10, 12\}$

6. What is $A \cup C$?

7. What is A^c ?

$\{5, 7, 8, 9, 10, 11\}$

8. What is B^c ?

You have a set of 10 cards numbered 1 to 10. You choose a card at random. Event A is choosing a number less than 7. Event B is choosing an odd number. Calculate the probability.

9. $P(A)$

$\frac{3}{5}$ 60%

10. $P(B)$

11. $P(A \cup B)$

$\frac{4}{5}$ 80%

12. $P(A \cap B)$

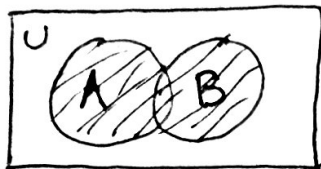
13. $P(A^c)$

$\frac{2}{5}$ 40%

14. $P(B^c)$

Draw a Venn diagram for each situation. Make sure everything is contained within a representation of the universal set.

15. $A \cup B$



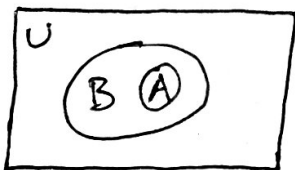
16. $A \cap B$

17. A^c



18. $(A \cap B)^c$

19. $A \subset B$



20. $A \cap B \cap C$