

Name: _____

UNIT

6

Review

Use the information below for questions 1–3.

$$U = \{25, 30, 35, 40, 60, 70, 80\} \quad A = \{25, 40, 60, 70, 80\} \quad B = \{30, 40\}$$

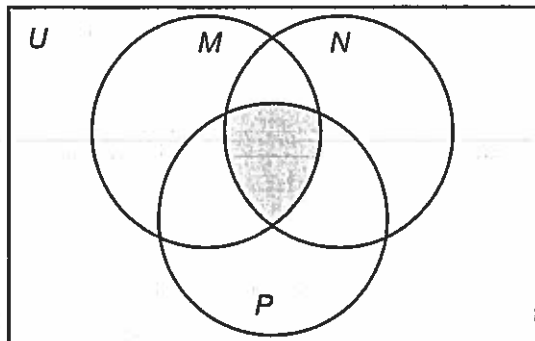
1. Find $A \cup B$.

2. Find $A \cap B$.

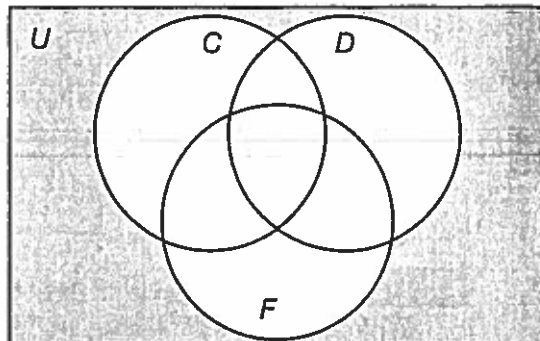
3. Find \bar{A} .

Use set notation (e.g., \cup , \cap , \sim) to describe the shaded portion of each Venn diagram.

4.



5.



Choose the best answer.

6. Event B is independent of event A if which of the following is true?

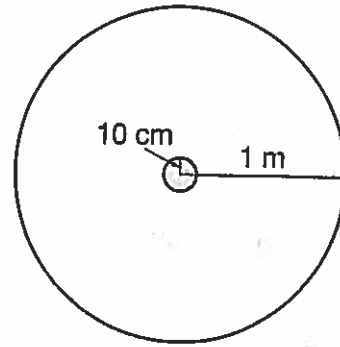
- A. $P(B | A) = P(A)$
- B. $P(B | A) = P(B)$
- C. $P(B | A) = P(A)P(B)$
- D. $P(B | A) = \frac{P(A \cap B)}{P(B)}$

7. Event B is independent of event A if which of the following is true?

- A. $P(A \cap B) = P(A)$
- B. $P(A \cap B) = P(B)$
- C. $P(A \cap B) = P(A)P(B)$
- D. $P(A \cap B) = \frac{P(A \cap B)}{P(B)}$

*** BONUS ***

14. What is the probability of hitting the bull's-eye on the target shown, assuming the dart lands somewhere on the target? The target has a radius of 1 meter, and the bull's-eye has a radius of 10 centimeters. **MUST SHOW WORK**



Use the information below for questions 15-17.

Sixty voters were asked which mayoral candidate they plan to vote for. Five Democrats said Walker, twelve Democrats said Wilson, and eight Democrats were undecided. Ten Republicans said Walker, four Republicans said Wilson, and eleven Republicans were undecided. Of voters who said they belonged to other political parties, one said Walker, one said Wilson, and eight were undecided.

15. Use the grid below to create a two-way frequency table for these data.

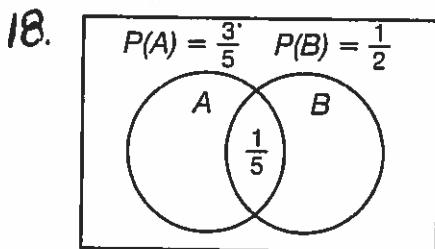
	Walker	Wilson	Undecided	Total
Democrats				
Republicans				
Other Party				
Total				

16. What is the probability that a randomly selected voter would say that he or she plans to vote for Walker?

17. What is the probability that a randomly selected voter would say that he or she plans to vote for Walker given that the voter is a Republican?

$P(W|R) =$

Find $P(A \cup B)$ given the probabilities in the Venn diagrams.



$P(A \cup B) =$ _____

Use the two-way frequency table and information below for question.

19. Physical education teachers surveyed students to find out in which activity 10th-grade students most wanted to participate.

	Yoga (Y)	Baseball (BB)	total
Boys (B)	15	35	
Girls (G)	40	10	
total			

If you chose a 10th-grade girl at random from the school, would you expect that the student would be more likely to want to do yoga or play baseball? Make a prediction just by looking at the table. Explain your thinking.

Now, use conditional probabilities to show how accurate your prediction was.

$$P(Y|G) =$$

$$P(B|G) =$$

Use the two-way frequency table and information below for questions.

Freshmen and sophomores had to sign up for either chorus or band as their music elective. The table shows which activity the freshmen and sophomores chose.

	Chorus (C)	Band (B)
Freshmen (F)	40	60
Sophomore (S)	72	28

20. What is the value of $P(C \cup F)$? What does this probability represent?

$$P(C \cup F) =$$