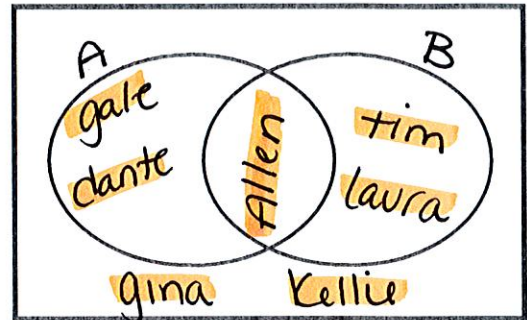


Name: _____ Date: _____

Probability Review: Venn Diagrams, Tables, & Words

Create a Venn Diagram for the following information.

- ★ **Event A:** Gale, Allen, & Dante like scary movies
- ★ **Event B:** Allen, Tim & Laura like comedy movies
- ★ Gina & Kellie don't prefer either of those 2 types



1. List the **outcomes** (also known as the sample space) for $A \cup B$.
Gale, Dante, Allen, Tim & Laura
2. List the **outcomes** for $A \cap B$.
Allen
3. List the **outcomes** for A' .
Tim, Laura, Gina & Kellie
4. Find $P(B)$.
 $\frac{3}{7}$
5. Find $P(A \cup B)$.
 $\frac{2}{7}$
6. Find $P(A \cap B)$.
 $\frac{1}{7}$

The table below represents a table about upperclassmen's suggestions for a class activity.

7. Find $P(11th)$.
 $\frac{7}{20}$ $\frac{14}{40}$
8. Find $P(\text{Dance})$.
 $\frac{17}{40}$
9. Find $P(10th \cup \text{Dance})$.
 $\frac{29}{40}$ $14 + 17 - 2$
10. Find $P(\text{Field Trip} \cap 11th)$.
 $\frac{3}{40}$
11. Find $P(\overline{12th} \cap \text{Talent Show})$.
 $\frac{19}{20}$ $\frac{38}{40}$

	Talent Show	Field Trip	Dance	
10 th	4	8	2	<u>14</u>
11 th	5	3	6	<u>14</u>
12 th	2	1	9	<u>12</u>
	<u>11</u>	<u>12</u>	<u>17</u>	<u>40</u>

12. Find $P(10th | \text{Field Trip})$.
 $\frac{2}{3}$ $\frac{8}{12}$
13. Find $P(\text{Talent Show} | 10th)$.
 $\frac{2}{7}$ $\frac{4}{14}$

D 14. Which of the following are **mutually exclusive**?

- A. Choosing a King or a Diamond in a deck of cards
- B. Choosing a band student or math student in a classroom
- C. Rolling 2 dice and getting an even sum or a sum less than 7
- D. Choosing a Jack or a 5 in a deck of cards**

B 15. Which of the following pair of events are **independent**?

- A. $P(A) = 0.08$; $P(B) = 0.4$; $P(A \cap B) = 0.12 \neq 0.08 \cdot 0.4$
- B. $P(A) = 0.30$; $P(B) = 0.15$; $P(A \cap B) = 0.045 = 0.3 \cdot 0.15$**
- C. $P(A) = 0.16$; $P(B) = 0.24$; $P(A \cap B) = 0.32 \neq 0.16 \cdot 0.24$

The sum of 2 dice

- 5/9** 16. $P(\text{even sum or a sum greater than 9})$ $18/36 + 6/36 - 4/36$
- 1/2** 17. $P(\text{sum less than 7 or a sum greater than 10})$ $15/36 + 3/36$
- 3/4** 18. $P(\text{odd sum or a sum less than 8})$ $18/36 + 21/36 - 12/36$

Calendar – A month is chosen from a year

- 1/4** 19. Find the probability of choosing a month that begins with a vowel. **3/12**
- 5/12** 20. Find the probability of choosing a month starting with the letter M or J. $\frac{2+3}{12}$
- 2/3** 21. Find the probability of selecting a month that begins and ends with a consonant. **8/12**
- 6/11** 22. Find the probability of selecting a month that begins with a consonant and then selecting another month begins with a consonant (*without replacement*) $\frac{9}{12} \cdot \frac{8}{11}$
- 1/4** 23. Find the probability of choosing a month that starts with a vowel given that they end in the letter R. **1/4**

PE Class Survey of 100 Students

no! 24. Use the data in the table to decide if liking PE is independent of your sex.

	Do you like PE?		
	Yes	No	
Male	38	12	50
Female	31	19	50

yes \cap male: $38/100 \neq 69/200$ yes \cap female: $31/100 \neq 69/200$