

5.3 online hw due today!

5.4 online hw due tomorrow!

4D and 4E Standard retakes due Wednesday 1/15

Standard 5A and 5B Opportunity 1 on Wednesday

Remember to add the Independent/Dependent/With/
Without Replacement to Week #7 packet and change to /58

Name _____ Hour _____

Trimester 2

Math 2B Week #7 Packet

| Date | Sections Done in Class | Homework Assigned | Homework Due Score /10 |
|-------------------------------------|--|--|--|
| Mon 1/6 | 5.2 Independent and Dependent Events | 5.2 Independent and Dependent Events ws | x |
| Tue 1/7 | 5.3 Two-Way Tables | 5.3 Two-Way Tables Pg 300-302 #s 1-16, 18, 20 | Week #6 Packet due today |
| Wed 1/8 | 5.4 Probability of Disjoint and Overlapping Events | 5.4 Probability of Disjoint and Overlapping Events Pg 309-310 #s 1-18, 20 | 5.2 Independent and Dependent Events ws /10 |
| Thurs 1/9 | 5.5 Conditional Probability with Notation | 5.5 ws... | 5.3 Two-Way Tables /10 |
| Fri 1/10 | Probability Activity / Review | Start Review ws | 5.4 Probability of Disjoint and Overlapping Events /10 |
| Mon 1/13 | x | x | 5.5 Conditional Probability with Notation /10 |
| Tues 1/14 | Week #7 Packet due today | x | Extra ws x /10 |
| Bell Ringers – 2 pts per day | | | /8 |
| Assignment Total for Week #7 | | | /58 /48 |

Upcoming...

- Mon Jan 13: Parent Teacher Conference 3:15-6:15 pm
- Tues Jan 14: Parent Teacher Conferences 8-11 am (No School)
- Wed Jan 15: Standard 4D and 4E Retakes due
- Wed Jan 15: Standards 5A and 5B - Opportunity 1
- Fri Jan 20: No School Human Rights Day

5.5 Conditional Probability Task

Name: _____ Hr: _____

Probability Notation:

$P(A)$ - Probability of Event A Occurring

$P(A|B)$ - Probability of Event A Occurring Given Event B

Complement: \bar{A} (not A) (can also be written as $\sim A$, $-A$, or A')

OR: \cup (This is the union of both sets or the probability of A or B or both events occurring)

AND: \cap (This is the intersection of both sets or the probability of both events occurring)

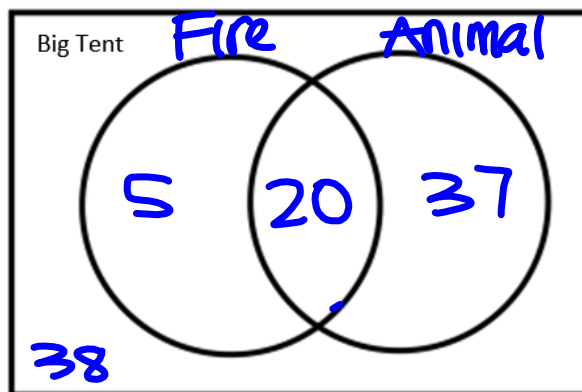
Example:

You've been invited to tryout to become a circus performer because of your amazing talents. Many other performers will be there and when you arrive in the big tent you discover:

- 100 people are in the big tent for the tryout
- 25 of them use fire in their act
- 38 of them use neither animals or fire
- 20 use both animals and fire in their act

How many of the performers use animals in their act?

(not A)



Now let's make a two-way table to help us discover what we have found

| | Fire | Not Fire | Total |
|------------|------|----------|-------|
| Animal | 20 | 37 | 57 |
| Not Animal | 5 | 38 | 43 |
| Total | 25 | 75 | 100 |

1. What information is more obvious from the Venn diagram?

Intersection

2. What information is more obvious from the two-way table?

grand total

3. Write what this notation is saying in your own words: $P(\bar{F}|A)$. Then calculate the probability.

prob don't use fire given use animal

$$\frac{37}{57} = 65\%$$

4. What is the probability that a randomly selected individual uses fire or an animal or $P(F \cup A)$.

$$P(F) + P(A) - P(F \cap A) = \frac{25}{100} + \frac{37}{100} - \frac{20}{100} = \frac{42}{100} = 42\%$$

5. What is the probability that a randomly selected individual uses fire given they use an animal or $P(F|A)$.

$$\frac{20}{57} = 35\%$$

6. Write what this notation is saying in your own words: $P(F \cap A)$. Then calculate the probability.

Prob use fire & animal

$$\frac{20}{100} = 20\%$$

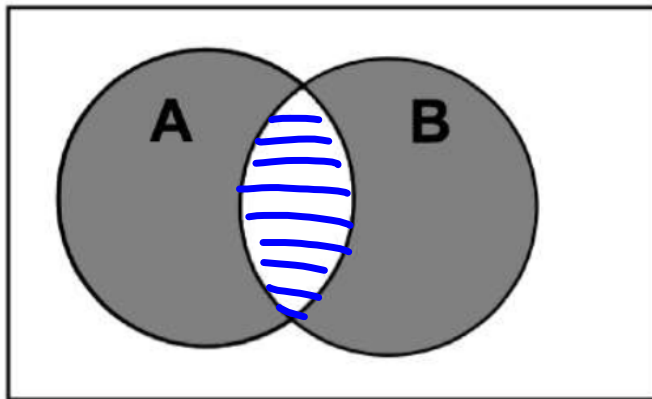
7. Write what this notation is saying in your own words: $P(\bar{F}|\bar{A})$. Then calculate the probability.

prob use fire, given don't use animal

$$\frac{5}{43} = 11\%$$

Sally's Error

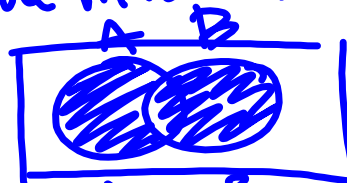
Sally was assigned to create a Venn diagram to represent $P(A \text{ or } B)$. Sally remembers that $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, so she creates the following diagram.



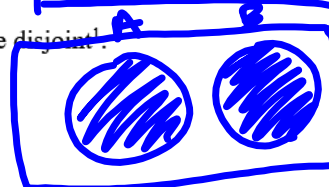
8. What was Sally's error?

didn't include intersection

9. Make a Venn diagram that correctly represents $P(A \text{ or } B)$.



10. Create a Venn Diagram for $P(A \text{ or } B)$ such that A and B are disjoint!



¹ Disjoint sets are also known as mutually exclusive sets.

due Wednesday

5.5 Conditional Probability Assignment– Grandma’s Birthday



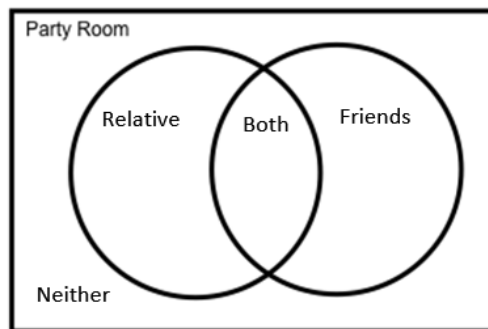
Name: _____

Hr: _____

You’ve been invited to Grandma Adam’s birthday party at the haunted mansion! All your crazy relatives and friends will be there. When you arrive, this is what you discover:

- 200 people are at the party
- 24 are relatives
- 43 are neither a friend or a relative
- 20 are both a friend and a relative

1. How many of your friends came to the party? Use the information above to complete the Venn diagram. *Note: a friend is anyone you’ve met. You are that kind of guy or gal.*



2. Once you’ve completed the Venn diagram, create a two-way table that displays the same data.

| | Friend | Not Friend | Total |
|--------------|--------|------------|-------|
| Relative | | | |
| Not Relative | | | |
| Total | | | |

Use the information from your table on number 2 to answer the following questions. Use F to represent "Friend" and R to represent "Relative." Remember: \cap means "and", \cup means "or"

3. Find $P(F)$

4. Find $P(R)$

5. Find $P(\bar{R})$

6. Find $P(\bar{F})$

7. Find $P(R|F)$

8. Find $P(F|R)$

9. Find $P(F|\bar{R})$

10. Find $P(R|\bar{F})$

11. Find $P(\bar{R}|\bar{F})$

12. Find $P(F \cup R)$

13. Find $P(F \cap R)$

In a standard deck of playing cards (52 total cards) there are 4 suits (hearts, diamonds, clubs, spades) with 2 suits being red (hearts and diamonds) and the others being black (clubs and spades). In each suit there is one card of each number 2-10, 1 Jack, 1 Queen, 1 King, and 1 Ace (making 13 total in each suit). Face cards are Jack, Queen, and King. In each of the following situations you are drawing 1 card. Find the probability: Remember: \cap means "and", \cup means "or"

14. Find $P(\text{king} \cap \text{heart})$

15. Find $P(\bar{\text{red}} | \text{facecard})$

16. Find $P(\text{club} \cup \text{spade})$

17. Find $P(2 \cap \text{facecard})$

18. Find $P(\text{black} \cap 10)$

19. Find $P(4 | \text{black})$

20. Find $P(\text{diamond} \cup \text{red})$

21. Find $P(8 \cup \text{red})$

For 22-23, you randomly select 3 cards from a standard well shuffled deck of 52 playing cards.

22. Find the probability that all 3 cards are hearts when you replace each card before selecting the next card.

23. Find the probability that all 3 cards are hearts when you **do not** replace each card before selecting the next card

