Unit 1

Day 5
Quiz Review & Quiz

Arrival

- Turn OFF your phone
  & Turn it in to Blue Pockets
  -> Look at the list by the poster to see
      which Pocket is yours today!

Get out:
- Quiz Review HW sheet
- Warm-Up paper

Day 6 First 8 in 8 video

http://youtu.be/kDVFaiIK3b0?hd=1

We'll watch this while we practice ☺

Warm Up Day 5: Create a Venn diagram to answer the questions.

1) 95 people attended a Super Bowl party for Super Bowl 50:

- 55 liked the Panthers
- 30 liked the Broncos
- 46 liked the Super Bowl Commercials
- 6 liked the Panthers and the Broncos
- 26 liked only the Panthers and the Commercials
- 18 liked Broncos and the Commercials
- 5 liked all three

a. How many people do not like the Panthers, Broncos or Super Bowl Commercials?

b. How many people only like the Panthers?

2. Given sets U = {a, b, c, n, o, p, r, s, t} and
    P = {p, a, n, t, s} B = {b, r, o, n, c, s}

a) P^C = _____   b) $P \cap B$ = _____

c) $n(B^c)$ = _____   d) $n(P \cup B^c)$ = _____

3. Students are auditioning for the Honors Band. 6 clarinet players audition for 1st and 2nd chair; 7 flute players audition for 1st, 2nd, and 3rd chair; and 4 percussion players audition for 3 positions on the drum line. How many possible ways can the band be chosen?

4. A password must have 3 non-repeating letters followed by 2 numbers that are not 0, and then one of the following symbols, !, @, #, $, %. How many passwords are possible?

5. How many ways are there to rearrange MATHEMATICS?

Warm Up: Create a Venn diagram
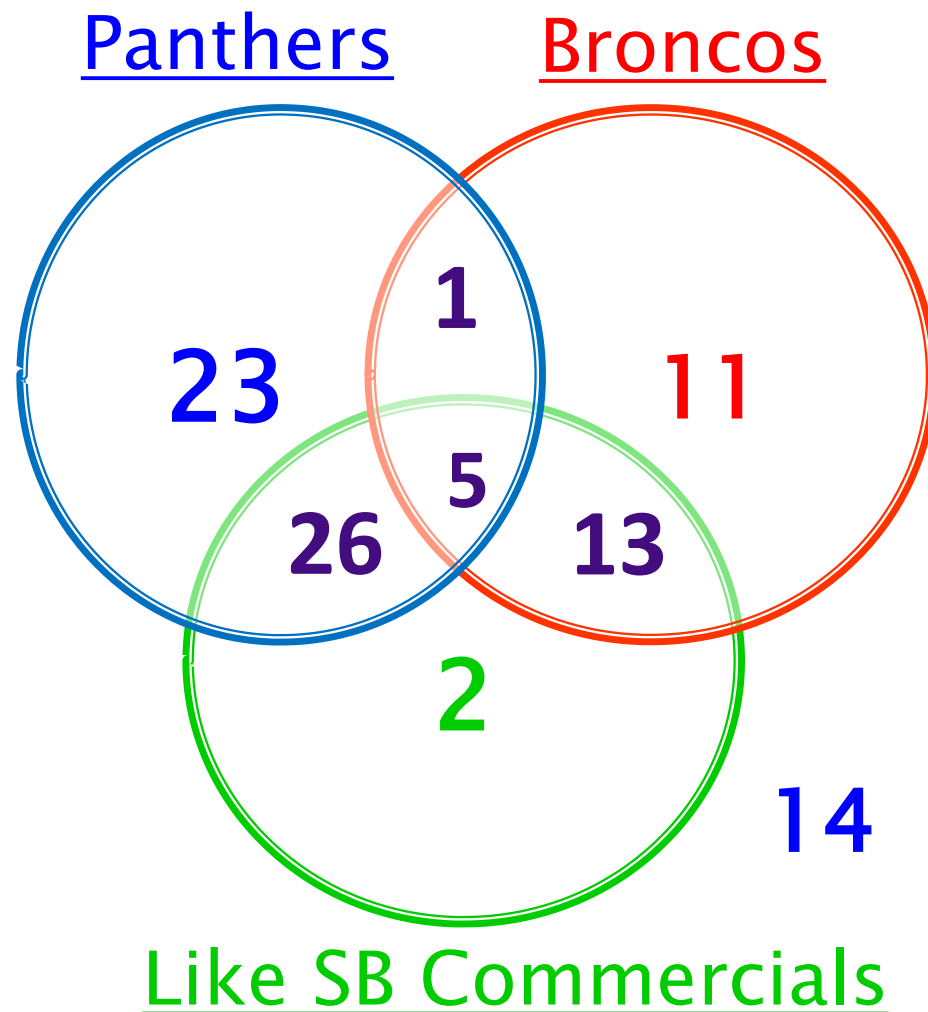
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Panthers   Broncos

Like SB Commercials
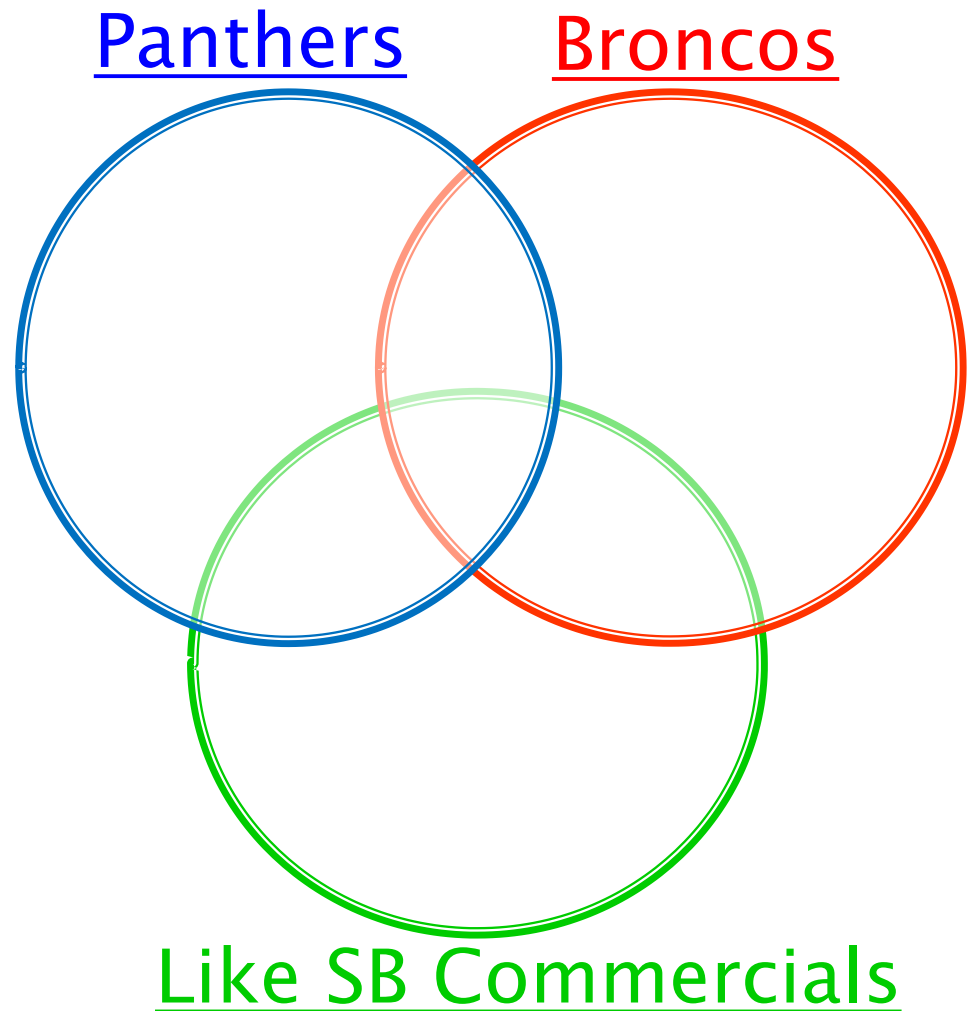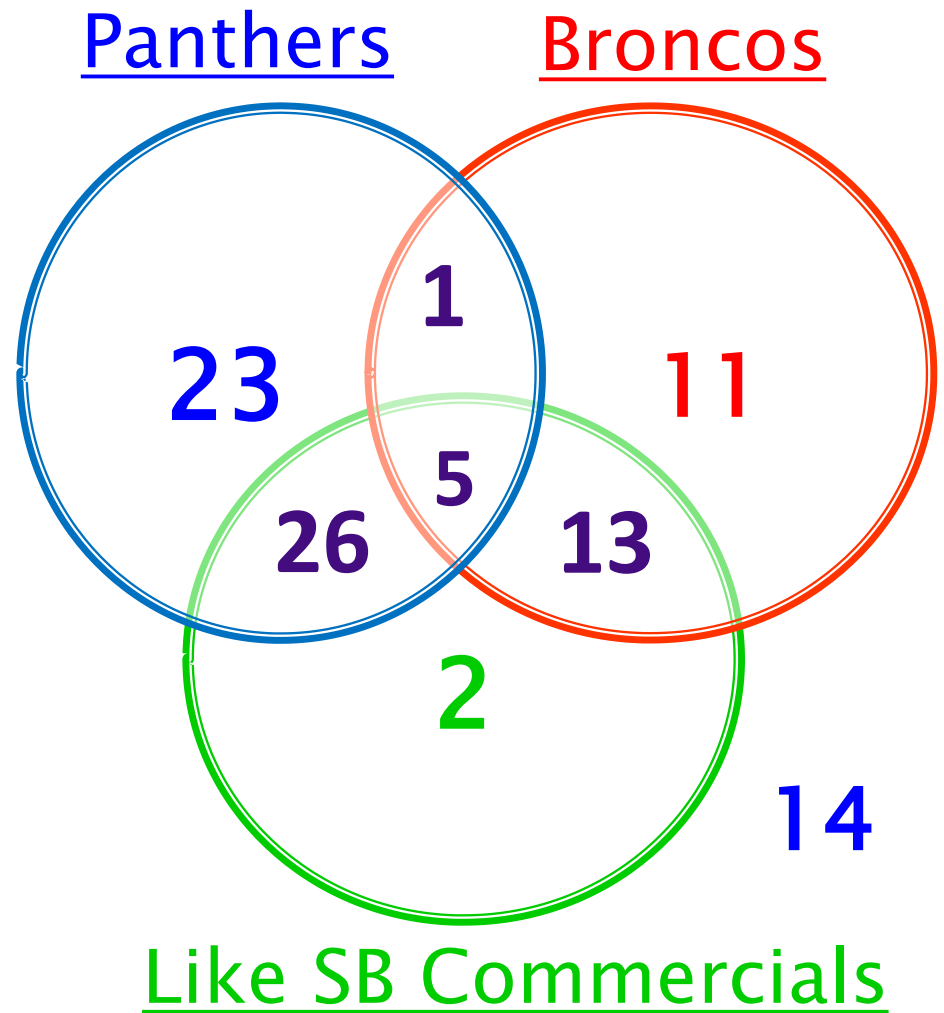
Warm Up: Create a Venn diagram

95 people attended a Super Bowl party for SB 50:

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Panthers   Broncos

23   1   11
      26   5   13
         2
                    14

Like SB Commercials

Warm Up: Create a Venn diagram and answer the questions

a. How many people do not like the Panthers, Broncos or Super Bowl Commercials?

b. How many people only like the Panthers?

Panthers
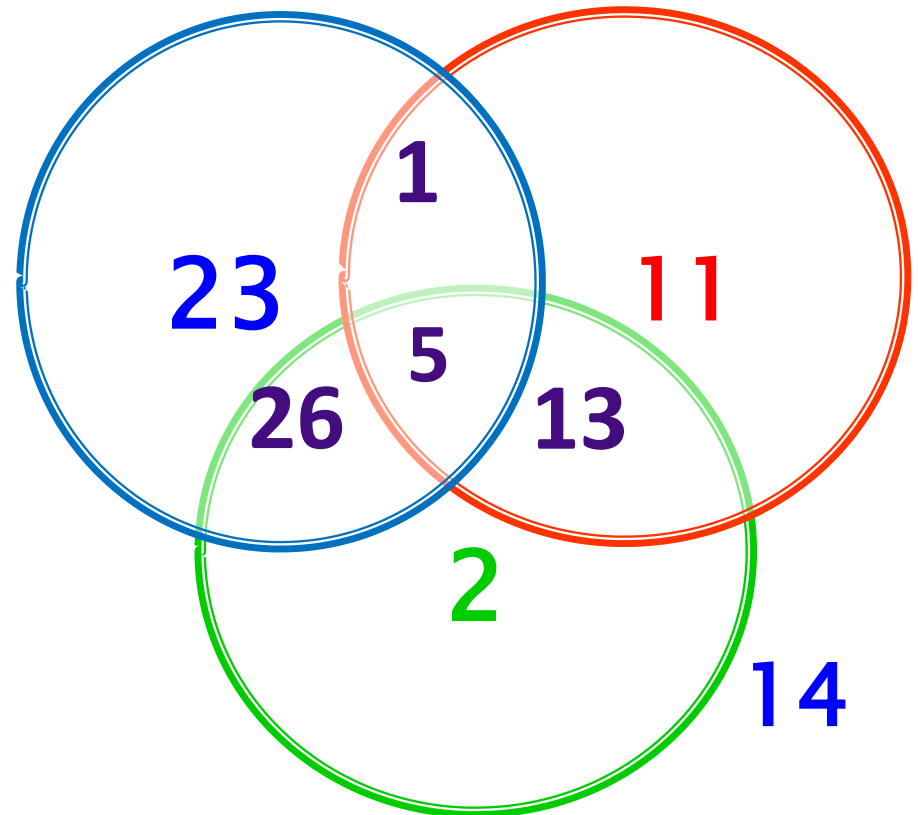
Broncos

1

23

11

5

26

13

2

14

Like SB Commercials

Warm Up: Create a Venn diagram and answer the questions

a. How many people do not like the Panthers, Broncos or Super Bowl Commercials? **14**

b. How many people only like the Panthers? **23**

Panthers   Broncos

1

23   11

5

26   13

2

14

Like SB Commercials

2. Given sets **U** = {a, b, c, n, o, p, r, s, t} and
P = {p, a, n, t, s}   **B** = {b, r, o, n, c, s}

a) **P^C** = _____

b) $P \cap B$ = _____

c) **n(B^c)** = _____

d) $n(P \cup B^c)$ = _____

3. Students are auditioning for the Honors Band. 6 clarinet players audition for 1st and 2nd chair; 7 flute players audition for 1st, 2nd, and 3rd chair; and 4 percussion players audition for 3 positions on the drum line. How many possible ways can the band be chosen?

4. A password must have 3 non-repeating letters followed by 2 numbers that are not 0, and then one of the following symbols, !, @, #, $, %. How many passwords are possible?

5. How many ways are there to rearrange MATHEMATICS?

2. Given sets **U** = {a, b, c, n, o, p, r, s, t} and
   P = {p, a, n, t, s}   **B** = {b, r, o, n, c, s}

a) **P^c** = __{b, c, o, r}__   b) $P \cap B$ = _____{n, s}

c) **n(B^c)** = __3__   d) $n(P \cup B^c)$ = __5_____

3. Students are auditioning for the Honors Band. 6 clarinet players audition for 1st and 2nd chair; 7 flute players audition for 1st, 2nd, and 3rd chair; and 4 percussion players audition for 3 positions on the drum line. How many possible ways can the band be chosen?

$$_6P_2 \bullet {_7}P_3 \bullet {_4}C_3 = 25200$$

4. A password must have 3 non-repeating letters followed by 2 numbers that are not 0, and then one of the following symbols, !, @, #, $, %. How many passwords are possible?

$$26 \cdot 25 \cdot 24 \cdot 9 \cdot 9 \cdot 5 = 6,318,000$$

5. How many ways are there to rearrange MATHEMATICS?

$$\frac{11!}{(2! \cdot 2! \cdot 2!)} = 4,989,600$$

because 2 M's, 2 A's, 2 T's

Quiz Review Questions?

»

Quiz Review

Given the following sets, determine whether each statement is true or false. Write out the word.

U= { a,b,c,d,e,f,g,h}   A= {a,c,d,e,g}   B= {b,e,f,g,h}   C={ a,e,g}

1. $A \subseteq B$ False

2. $C \subseteq A$ True

3. $f \in B$ True

4. $g \notin A$ False

5. $A = C$ False

6. $\emptyset \subseteq B$ True

empty set is a subset of all sets

Using the sets above, find...

7. $n(A \cup C) =$ $\boxed{5}$

8. $n(A \cap C) =$ $\boxed{3}$

9. $n(A^c) =$ $\boxed{3}$

U= { 1,2,3,4,5,6,7,8,9 }   A= {1,2,3,4,5,6}   B= {2,4,6,8}

Find:

$B^c = \{1,3,5,7,9\}$

10. $A \cup B =$ $\boxed{\{1,2,3,4,5,6,8\}}$

11. $A \cap B =$ $\boxed{\{2,4,6\}}$

12. $A \cap B^c =$ $\boxed{\{1,3,5\}}$

13. $A^c \cap B =$ $\boxed{\{8\}}$

$A^c = \{7,8,9\}$

14. How many 7 digit phone numbers are possible if the first and second digits cannot be a zero or one?

$$8 \cdot 8 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 = \boxed{6,400,000}$$

15. In a 52 card deck, are drawing an ace and drawing a red card mutually exclusive?

No! you Can have an ace that is red.

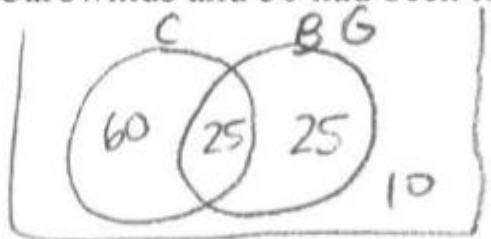16. Suppose you roll a pair of dice. Find the probability that:

Both dice show different numbers, and neither is a 3. $= \dfrac{20}{36} = \boxed{5/9}$

$30 - 11$

17. Out of a group of 120 students, 85 had been to Carowinds and 50 had been to Busch Gardens. 25 had been to both parks. Make a Venn Diagram for this.

a.   How many students have been to Carowinds, but not Busch Gardens?   60

b.   How many students have been to neither park?   10

16. Suppose you roll a pair of dice. Find the probability that: Both dice show different numbers, and neither is a 3.

Die	1	2	3	4	5	6
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
4	(4, 1)	(4, 2)	(4, 3)	(4, 4)	(4, 5)	(4, 6)
5	(5, 1)	(5, 2)	(5, 3)	(5, 4)	(5, 5)	(5, 6)
6	(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)

18. How many possible ways are there to arrange all the letters in the word SENIORS? $\underline{2520}$

$$\frac{7!}{2!}$$

19. I am trying to recall my friend's 7 digit cell phone number and I know the first digit is a 4, and the last three digits are 123. How many phone numbers are there that meet these requirements? $\underline{1,000}$

$$\underline{1} \cdot \underline{10} \cdot \underline{10} \cdot \underline{10} \cdot \underline{1} \cdot \underline{1} \cdot \underline{1} = 1,000$$

20. A bank plans to assign an identification code to each account. Each code will have 2 digits that can't be the same and then 2 letters. How many different account numbers can be formed? $\underline{60,840}$

21. Draw a Venn Diagram and shade the appropriate area for $A \cap B \cap C^c$.

$$\underline{10} \cdot \underline{9} \cdot \underline{26} \cdot \underline{26} = 60,840$$
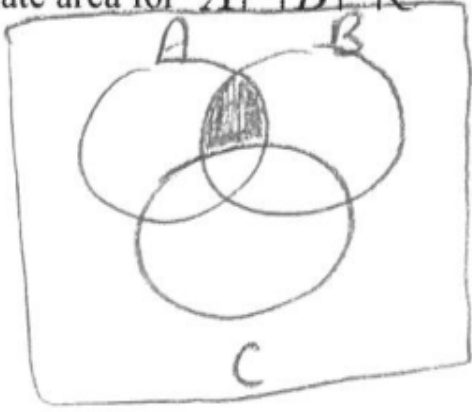
HW Day 5

Tonight's HW = Packet p. 7-8
(this material is on Quiz 2)

Extra Practice:
Hint - a Venn diagram can help.

Given U = {1, 2, 3, …9} and

      A = {x | x is the odd integers from 1 to 9 }

2. Write A^c using roster notation.

3. If B = {x | x is multiples of 3}, what is A U B?

4. 4 $\in$ A. True or False. (write the full word)

5. U $\subseteq$ A. True or False. (write the full word)

Extra Practice: ANSWERS
Hint - a Venn diagram can help.

Given U = {1, 2, 3, …9} and

A = {x | x is the odd integers from 1 to 9 }

2. Write A^c using roster notation.

A^c = { 2, 4, 6, 8 }

3. If B = {x | x is multiples of 3}, what is A U B?

A U B = { 1, 3, 5, 6, 7, 9 }

4. 4 $\in$ A. True or False. (write the full word)

False!

5. U $\subseteq$ A. True or False. (write the full word)

False!

Quiz Time!

- After the Quiz, work on Packet p. 7-8