

Journal Entry:

Explain similarities and differences in solving  $|x - 1| = 2$  and  $|x - 1| < 2$ .

<u>SIMI.</u>	<u>Diff</u>
-answers	-set up
-+ answers	-FLIP SIGN

Aug 18-2:52 PM

Section 3-8  
Unions and Intersections of Sets

Students will be able to find the union and intersections of sets.

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**Getting Ready!**

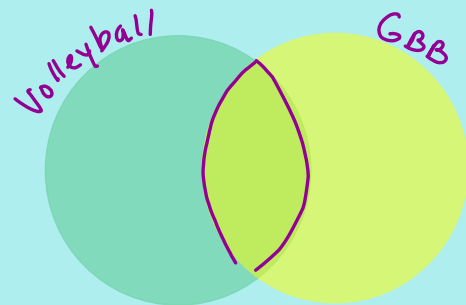
Fifty students were polled about their after-school activities. All said that they participate in one or more of three clubs: the Robotics Club (RC), the Student Council (SC), and the Theater Club (TC). How many students participate in the theater club only? Use the information in the table. Explain your reasoning.

Activity	Number of Students
RC	22
SC	22
TC	5
RC and SC only	8
RC and TC only	6
SC and TC only	3
RC, SC, and TC	3

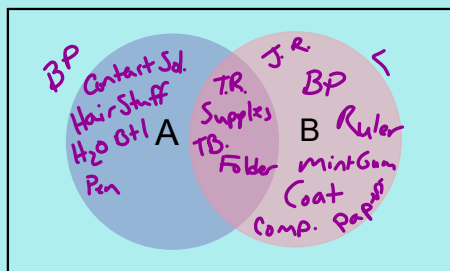
*Handwritten notes:* 50, -33, 17, RC

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Venn Diagrams create regions that show union and intersections.



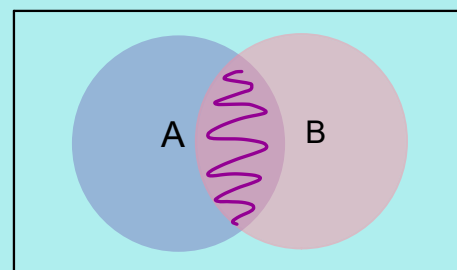
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union contains each element that belongs to at least one of the sets.  $A \cup B$

-what is the union of everything that our class carries in their backpacks and has in their lockers

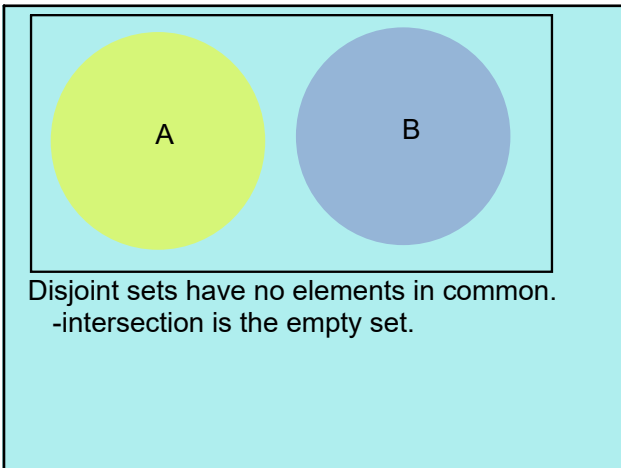
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intersection-contains the elements that belong to both of the sets.  $A \cap B$

-What is the intersection of everything that our class has in their backpacks and their lockers?

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$P = \{x \mid x \text{ is a whole number less than } 5\}$   
 $Q = \{y \mid y \text{ is an even natural number less than } 5\}$   
 What is  $P \cup Q$ ?  $\{0, 1, 2, 3, 4\}$   
 What is  $P \cap Q$ ?  $\{2, 4\}$

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$X = \{x \mid x \text{ is a whole number less than } 15\}$   
 $Y = \{y \mid y \text{ is an odd integer}\}$   
 $Z = \{z \mid z \text{ is a multiple of } 4\}$   
 Find:  
 $X \cap Z = \{4, 8, 12, 16\}$   
 $Y \cap Z = \{\emptyset\}$

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Make a Venn Diagram with a partner:

$A = \{x \mid x \text{ is one of the first five letters in the English alphabet}\}$   
 $B = \{x \mid x \text{ is a vowel}\}$   
 $C = \{x \mid x \text{ is a letter in the word VEGETABLE}\}$

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Of 30 students in student government, 20 are honor students and 9 are officers and honor students. All of the students are officers, honor students, or both. How many are officers but not honor students?

Nov 8-3:19 PM

A compound inequality with the word and contains an overlap of the two graphs, and this is represented by the intersection.

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Write the solutions as unions or intersections.

$$3 \leq x \leq 6$$

$$x < -2 \text{ or } x > 5$$

$$x \geq 3 \cap x \leq 6$$

$$x < -2 \cup x > 5$$

Hwk: pg 218 - 220  
#14 - 20 evens, 24 - 40 (4th),  
46, 48, 52, 60 - 63 all

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Nov 8-3:26 PM