

Chapter 2 Quiz Review

Solve and graph. Write your answer using set notation.

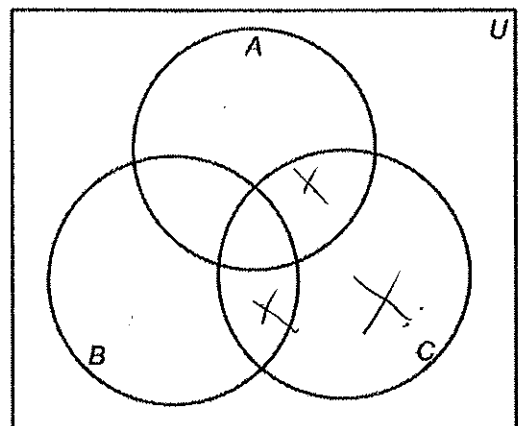
1. $\frac{3}{5} + c > \frac{1}{4}$
2. $-9x \leq 81$
3. $\frac{w}{-6} \geq -5$
4. $-72 < 8p$
5. $3(x + 8) < 9$
6. $-4(x - 2) > 10$
7. $14 < 2 - x$
8. $\frac{1}{8}(16c - 24) < \frac{1}{4}$
9. Your club is in charge of making pins that students can buy to show their school spirit for the upcoming football game. You have made 225 pins so far, and you only have 2 hours left to make the rest of the pins. You need to make at least 400 pins.
 - a. Write an inequality that gives the possible numbers p of pins you have to make per minute in order to exceed your goal
 - b. What are the possible numbers of pins you have to make per minute in order to exceed your goal?
10. You have \$90 to buy CDs for your friend's party. The CDs cost \$18 each. What are the possible numbers of CDs that you can buy?

Given a, b, c , and d are all real numbers such that $d < c < 0 < b < a$. Tell whether the statement is always, sometimes or never true.

11. $ac > 0$
12. $ab > cd$
13. $ad > c$

Let U be all integers between 1 and 10. $A = \{2, 6, 8, 9\}$, $B = \{1, 3, 4, 5, 7, 9\}$, and $C = \{1, 2, 5, 8, 9\}$

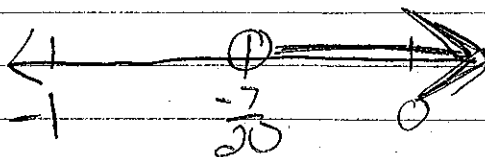
14. Find $A \cap U \cup B$
15. Find $\overline{A} \cap B$
16. Find $(A \cap B) \cap C$
17. Find $\sim(A \cap B) \cap C$
18. Complete the Venn Diagram. $\sim(A \cap B) \cap (C \cup \sim B)$



Chapter 2 Review

$$1. \frac{3}{5} + c > \frac{1}{4}$$

$$\frac{-3}{5} \quad \frac{-3}{5}$$



$$c > \frac{1}{4} - \frac{3}{5}$$

$$\frac{5}{20} - \frac{12}{20}$$

$$\{c | c > -\frac{7}{20}\}$$

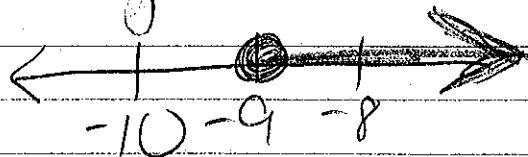
$$2. -9x \leq 81$$

$$\frac{-9}{-9} \quad \frac{-9}{-9}$$

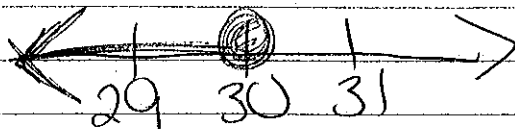
$$x \geq -9$$

$$\{x | x \geq -9\}$$

* remember to reverse the inequality sign when dividing by a negative.



$$3. \frac{w}{-6} \geq -5 \quad -6$$



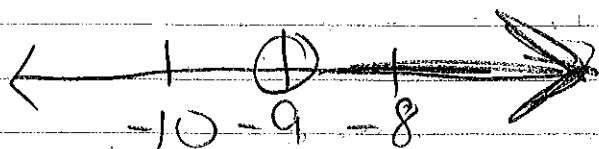
$$w \leq 30$$

$$\{w | w \leq 30\}$$

$$4. \quad \frac{-72}{8} < \frac{8p}{8}$$

$$-9 < p$$

$$\{p | p > -9\}$$



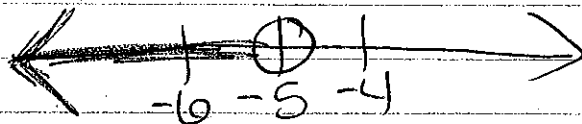
$$5. \quad \frac{3(x+8)}{3} < \frac{9}{3}$$

$$x+8 < 3$$

$$-8 \quad -8$$

$$x < -5$$

$$\{x | x < -5\}$$



$$6. \quad -4(x-2) > 10$$

$$-4x + 8 > 10$$

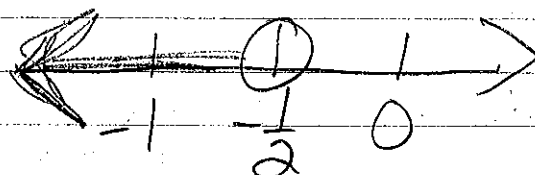
$$-8 \quad -8$$

$$-4x > 2$$

$$\frac{-4x}{-4} > \frac{2}{-4}$$

$$x < -\frac{1}{2}$$

$$\{x | x < -\frac{1}{2}\}$$



$$7. \quad 14 < 2 - x$$

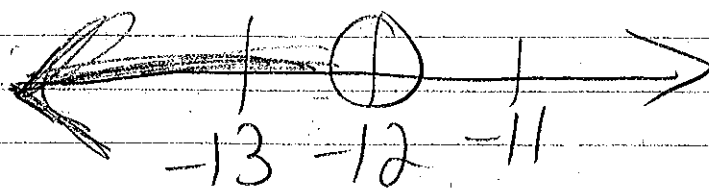
$$-2 \quad -2$$

$$12 < -x$$

$$\frac{12}{-1} < \frac{-x}{-1}$$

$$-12 > x$$

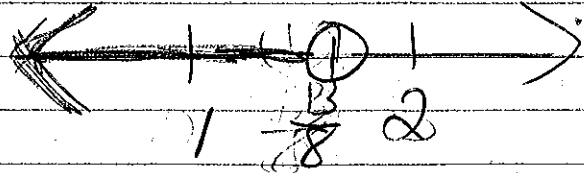
$$\{x | x < -12\}$$



$$8. \frac{1}{8}(16C - 24) < \frac{1}{4} \cdot 8$$

$$\begin{array}{r} 16C - 24 < 2 \\ +24 \quad +24 \\ \hline 16C < 26 \\ \frac{16C}{16} < \frac{26}{16} \end{array}$$

$$\{C | C < \frac{13}{8}\}$$



9. a. $225 + 2x > 400$

it would have to be greater to exceed the goal.

b.
$$\begin{array}{r} -225 \quad -225 \\ 2x > 175 \\ \hline x > 87.5 \end{array}$$

$$x > 87.5$$

you would need to make at least 88 pins per hour which means:

$$\frac{88 \text{ pins}}{1 \text{ hr}} \cdot \frac{1 \text{ hr}}{60 \text{ min}}$$

$$\frac{88}{60} \approx 1.467$$

Approximately 1.5 pins per minute.

$$10. \frac{18x}{18} \leq \frac{90}{18}$$

$$x \leq 5$$

* word problems write your answer as a statement.

You can purchase 0, 1, 2, 3, 4, or 5 CD's.

$$11. \text{ never } (+)(-1) > 0$$

$$\begin{array}{cc} - & - \\ & + + \\ d < c < 0 < b < a \end{array}$$

$$12. ab > cd$$

$$+ \cdot + > - \cdot -$$

Sometimes

$$5 \cdot 3 > (-1)(-2)$$

$$15 > 2 \checkmark$$

$$2 \cdot 1 > (-7)(-9)$$

$$2 \not> 63 \text{ X}$$

$$13. ad > c$$

$$+ \cdot - > -$$

Sometimes

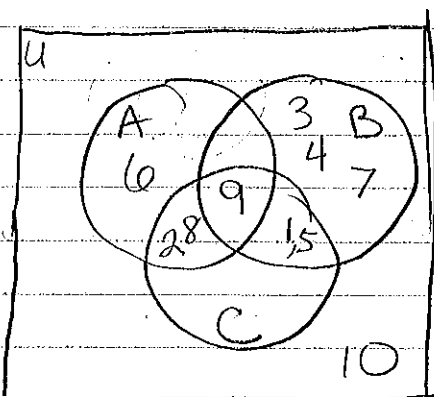
$$7 \cdot (-3) > -1$$

$$-21 \not> -1 \text{ X}$$

$$\frac{1}{4} \cdot -2 > -1$$

$$\begin{array}{cc} a = 7 & a = \frac{1}{4} \\ c = -1 & c = -1 \\ d = -3 & d = -2 \end{array}$$

$$-\frac{1}{2} > -1 \checkmark$$



$$14. A \cup U \cup B$$

$$\{1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

$$15. \bar{A} \cap B$$

$$\{1, 3, 4, 5, 7\}$$

$$16. (A \cap B) \cap C$$

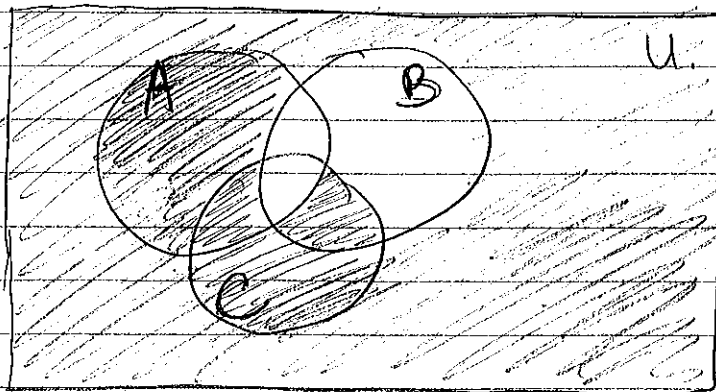
$$\{9\}$$

* A intersects the Universal in circle A, so $A \cup U$ is just set A.

$$17. \sim (A \cap B) \cap C$$

$$\{1, 2, 5, 8\}$$

18.



u.

$$\sim(A \cap B) \cap (C \cup \sim B)$$