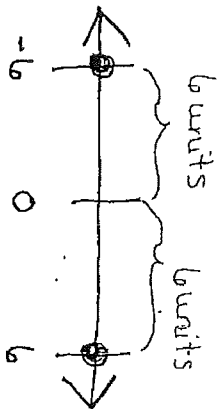


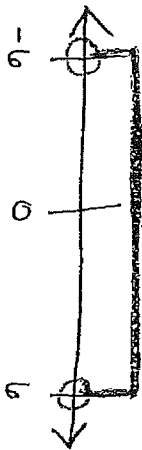
$$|X| = 6$$

$$X = 6 \quad X = -6$$



$$|X| < 6$$

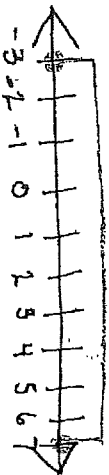
$$X < 6 \text{ and } X > -6$$



"AND"

$$|X-2| \leq 5$$

$$\begin{array}{l} -2 \leq 5 \quad X-2 \geq -5 \\ +2 \quad +2 \quad +2 \quad +2 \\ \hline \leq 7 \text{ and } X \geq -3 \end{array}$$



$$-3 \leq X \leq 7$$

$$|X+2| = 3$$

$$\begin{array}{l} X+2=3 \\ -2-2 \\ \hline X = 1 \end{array}$$

$$\begin{array}{l} X+2=-3 \\ -2-2 \\ \hline X = -5 \end{array}$$

$$|1+2|=3$$

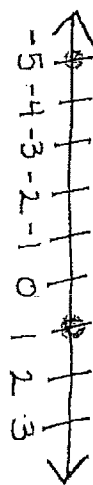
$$|-5+2|=3$$

$$|3|=3$$

$$|-3|=3$$

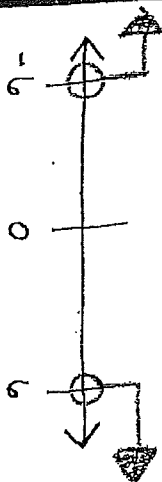
$$3=3$$

$$3=3$$



$$|X| > 6$$

$$X > 6 \text{ or } X < -6$$

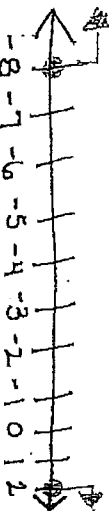


"OR"

$$|X+3| \geq 5$$

$$\begin{array}{l} X+3 \geq 5 \\ -3-3 \\ \hline X \geq 2 \end{array}$$

$$\begin{array}{l} X+3 \leq -5 \\ -3-3 \\ \hline X \leq -8 \end{array}$$



Solve Absolute Value and Compound Inequalities

* All work must be completed on a separate piece of paper.

Part 1:

Practice and Problem Solving

Extra Practice is on page R1.

Examples 1-4 Solve each inequality. Graph the solution set on a number line.

12. $8 < 2v - 4 < 16$

13. $-7 \leq 4d - 3 \leq -1$

14. $4r + 3 < -6$ or $3r - 7 > 2$

15. $6y - 3 < -27$ or $-4y + 2 < -26$

16. $|6h| < 12$

17. $|-4k| > 16$

18. $|3x - 4| > 10$

19. $|8t + 3| \leq 4$

20. $|-9n - 3| < 6$

21. $|-5j - 4| \geq 12$

Solve each inequality. Graph the solution set on a number line.

33. $28 > 6k + 4 > 16$

34. $m - 7 > -12$ or $-3m + 2 > 38$

35. $|-6h| > 90$

36. $-|-5k| > 15$

37. $3|2z - 4| - 6 > 12$

38. $6|4p + 2| - 8 < 34$

39. $\frac{|5f - 2|}{6} > 4$

40. $\frac{|2w + 8|}{5} \geq 3$

Part 2: Must check all solutions.

1-7 odd

1. $|3x - 2| = 11$

2. $|2x - 7| - 3 = 10$

3. $4|3x - 1| = -20$

4. $3|x - 9| + 4 = 16$

5. $|4x + 5| = 1 - 2x$

6. $3|x - 2| = 24 + 6x$

7. A company packs coffee beans in airtight bags. Each bag should weigh 16 ounces but it is hard to fill each bag to the exact weight. After being filled, each bag is weighed and if it is more than 0.25 ounces overweight or underweight, it is emptied and repacked. What are the lightest and heaviest acceptable bags?

8. Hypothermia and hyperthermia are similar words but have opposite meanings. Hypothermia is defined as a lowered body temperature. Hyperthermia is an extremely high body temperature. Both are potentially dangerous conditions, and can occur when a person's body temperature is more 8 degrees above or below the normal body temperature of 98.6. At what temperatures do these conditions begin to occur?