

P. 51

10)  $8\pi \rightarrow$  IRRATIONAL

13)  $12\frac{7}{8} \rightarrow$  RATIONAL

11)  $-79 \rightarrow$  integer

14)  $-\sqrt{60} > -8$

12)  $\sqrt{121} = 11 \rightarrow$  Natural #

15)  $5 < \sqrt{32}$

20)  $2x - 5 = 17$   
 $+5 +5$

$2x = 22$   
 $\frac{2x}{2} = \frac{22}{2}$

$x = 11$

21)  $3(x+1) = 9 + 2x$

$3x + 3 = 9 + 2x$   
 $-2x -2x$

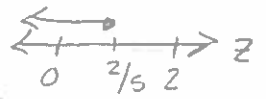
$x + 3 = 9$

$x = 6$

22)  $4 - 5z \geq 2$

$-4 -4$   
 $-5z \geq -2$   
 $\frac{-5z}{-5} \geq \frac{-2}{-5}$

$z \leq \frac{2}{5}$

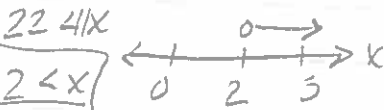


23)  $2(5 - 3x) < x - 4(3 - x)$

$10 - 6x < x - 12 + 4x$

$10 - 6x < 5x - 12$

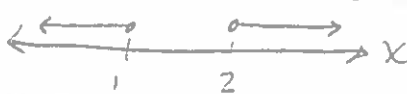
$+6x +6x$   
 $10 < 11x - 12$   
 $+12 +12$



24)  $10 \geq 7 + 3x$  AND  $9 - 4x \leq 1$

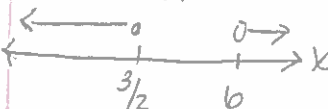
$-7 -7$   
 $\frac{3}{3} \geq \frac{3x}{3}$  AND  $\frac{-9}{-4} \leq \frac{-8}{-4}$

$1 \geq x$  AND  $x \geq 2$



Because this is an "AND" problem, the two endpoints should connect. Because these do not, there is "No solution"

25)  $3 \geq 2x$  OR  $x - 4 > 2$   
 $\frac{3}{2} \geq x$  OR  $x > 6$



An "OR" problem means either solution will work

26)  $5x$  and  $3x$  are dimensions of a rectangle.  $P = 32$ .  $2(5x) + 2(3x) = 32$ .  $10x + 6x = 32$ .  $16x = 32$ .  $x = 2$ . Rectangle's dimensions are 10"x6"

28)  $|x - 4| + 3 = 1$   
 $-3 -3$

$|x - 4| = -2$

No solution

Absolute value is always positive

29)  $3|x + 10| = 6$   
 $\frac{3}{3} \frac{3}{3}$

$|x + 10| = 2$

$x + 10 = 2$     $x + 10 = -2$

$x = -8$     $x = -12$

30)  $2|x - 7| = x - 8$   
 $\frac{2}{2}$     $\frac{2}{2}$

$|x - 7| = \frac{1}{2}x - 4$

$x - 7 = \frac{1}{2}x - 4$     $x - 7 = -\frac{1}{2}x + 4$   
 $-\frac{1}{2}x + 7$     $-\frac{1}{2}x + 7$     $+\frac{1}{2}x + 7$     $+\frac{1}{2}x + 7$

$\frac{1}{2}x = 3$

$x = 3\frac{1}{2}$

$\frac{3}{2}x = 11$

$x = 11 \cdot \frac{2}{3}$

$x = 3\frac{1}{2}$

Neither checks  
No solution

$$|3x-2|+4 \leq 7$$

$$|3x-2| \leq 3$$

$$-3 \leq 3x-2 \leq 3$$

$$-\frac{1}{3} \leq \frac{3x}{3} \leq \frac{5}{3}$$

$$-\frac{1}{3} \leq x \leq \frac{5}{3}$$

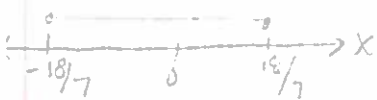


$$|7x|+3 \leq 21$$

$$|7x| \leq 18$$

$$-18 \leq 7x \leq 18$$

$$-\frac{18}{7} \leq x \leq \frac{18}{7}$$



$$32) \frac{4}{4} |y-9| > \frac{36}{4}$$

$$|y-9| > 9$$

$$y-9 > 9$$

$$y > 18$$

$$y-9 < -9$$

$$y < 0$$



$$34) \frac{1}{2} |x+2| > (6) \cdot 2$$

$$|x+2| > 12$$

$$x+2 > 12$$

$$x > 10$$

$$x+2 < -12$$

$$x < -14$$



$$35) |x-43.6| \leq 0.1$$