

# Warm-up pg 23: 66 (in Yellow Pages)

## P.3 Linear Equations & Inequalities

P.3 - 1

### Properties of Equality

Reflexive  $a = a$

Symmetric If  $a = b$ , then  $b = a$

Transitive If  $a = b$  and  $b = c$ , then  $a = c$

Addition If  $a = b$  and  $c = d$ , then  $a + c = b + d$

Multiplication If  $a = b$  and  $c = d$ , then  $ac = bd$

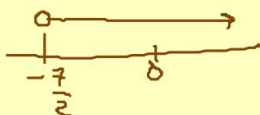
Solve:

$$3x - 1 < 5x + 6$$

$$-7 < 2x$$

$$x > -\frac{7}{2}$$

$$\left(-\frac{7}{2}, \infty\right)$$



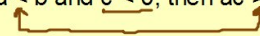
### Properties of Inequality

If  $a < b$  and  $b < c$ , then  $a < c$

If  $a < b$  then  $a + c < b + c$   
If  $a < b$  and  $c < d$ , then  $a + c < b + d$

If  $a < b$  and  $c > 0$ , then  $ac < bc$

If  $a < b$  and  $c < 0$ , then  $ac > bc$  \*



42.  $4(1 - x) + 5(1 + x) > 3x - 1$

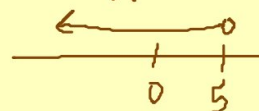
$$4 - 4x + 5 + 5x > 3x - 1$$

$$9 + x > 3x - 1$$

$$-2x > -10$$

$$x < 5$$

$$(-\infty, 5)$$



Homework: P.3 p 29:

5-10, 17, 21-27 odd, 37, 41-45 odd, 51, 65, 67, 71, 73

$$27. \frac{3(x+5)}{3 \cdot 8} - \frac{12(x-2)}{12 \cdot 2} = \frac{1 \cdot 8}{3 \cdot 8}$$

$$\frac{3x+15}{24} + \frac{-12x+24}{24} = \frac{8}{24}$$

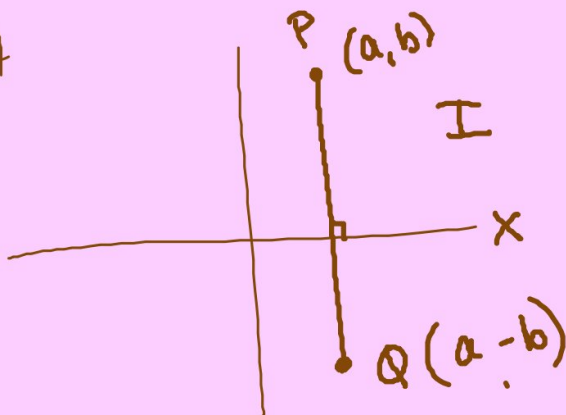
$$\frac{\cancel{24}}{1} \frac{-9x+39}{\cancel{24}} = \frac{\cancel{8}}{\cancel{24}}$$

$$-9x+39=8$$

$$-9x=-31$$

$$x = \frac{31}{9}$$

67



$$9. |\pi - 4| = -(\pi - 4) = 4 - \pi$$

$$|5 - 8| = |-3| = -(-3) = 3$$

$$56. |x - 2| < 3$$

$$-3 < x - 2 < 3$$

$$\boxed{-1 < x < 5}$$

$$|x| < 3$$

$$-3 < x < 3$$

$$56. |x-2| < 3$$

$$-3 < x-2 < 3$$

$$\boxed{-1 < x < 5}$$

$$|x| < 3$$

$$-3 < x < 3$$