**For problems 1- 5: Solve for x. Show detailed work. Write your solution using set notation, and graph the solution set.**

1. $7-4\left(x+3\right)<11$ \_\_\_\_\_\_\_\_\_\_\_\_\_

2. $\frac{4}{5}x-1>19$ \_\_\_\_\_\_\_\_\_\_\_\_\_

3. $11x+2\leq 5(2x-3)$ \_\_\_\_\_\_\_\_\_\_\_\_\_

4. $9x+2\geq 3x+8$ \_\_\_\_\_\_\_\_\_\_\_\_\_

5. $4\left(1+2x\right)+5\leq -15$ \_\_\_\_\_\_\_\_\_\_\_\_\_

**For problems 6 and 7: Apply your knowledge of the properties of inequality to answer each question.**

Step 1: $\frac{3}{4}x+2<8$

Step 2: $\frac{3}{4}x+2-2<8-2$

Step 3: $\frac{3}{4}x<6$

Step 4: $4∙\frac{3}{4}x<6∙4$

Step 5: $3x<24$

Step 6: $\frac{3x}{3}<\frac{24}{3}$

Step 7: $x<8$

6. Which property justifies the work between…

A) Step 1 and Step 2? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B) Step 3 and Step 4? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C) Step 5 and Step 6? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. Which property justifies the work below? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

If $9y+4<x$ and $x<5y$, then $9y+4<5y.$