

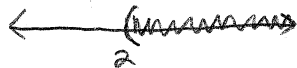
MAC1105 College Algebra
1.7 Practice Problems

Solve the following inequalities and write your answer in interval notation.

1. $3x+5 > 11$
 $-5 \quad -5$

$$\frac{3x}{3} > \frac{6}{3}$$

$$x > 2$$



Set builder

$$\{x \mid x > 2\}$$

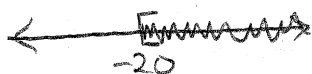
Interval notation

$$(2, \infty)$$

2. $4-2x \leq 44$
 $-4 \quad -4$

$$\frac{-2x}{-2} \leq \frac{40}{-2}$$

$$x \geq -20$$



Set builder

$$\{x \mid x \geq -20\}$$

Interval Notation

$$[-20, \infty)$$

3. $3x+4 < 4x+13$
 $-4x \quad -4x$

$$-x+4 < 13$$

$$\frac{-x}{-1} < \frac{9}{-1}$$

$$x > -9$$

Set builder

$$\{x \mid x > -9\}$$

Interval Notation

$$(-9, \infty)$$

4. $\frac{4}{5}x - \frac{1}{4} \leq \frac{7}{10}x - \frac{4}{5}$

$$20 \cdot \frac{4}{5}x - 20 \cdot \frac{1}{4} \leq 20 \cdot \frac{7}{10}x - 20 \cdot \frac{4}{5}$$

$$\frac{16x}{-14x} - 5 \leq \frac{14x}{-14x} - 16$$

$$\frac{2x}{+5} - 5 \leq \frac{-16}{+5}$$

$$\frac{2x}{2} \leq \frac{-11}{2}$$

$$x \leq -\frac{11}{2}$$

Set builder

$$\{x \mid x \leq -\frac{11}{2}\}$$

Interval Notation
 $(-\infty, -\frac{11}{2}]$

5. $2x+5 > 2(x+3)$

$$2x+5 > 2x+6$$

$$-2x \quad -2x$$

$$5 > 6$$

False

No solution

$\emptyset \leftarrow$ empty set

