

MTH 95 Lesson 16 - Compound Inequalities

Name: _____

1. Determine if the given number is a solution to $x > 1$ and $x \leq 2$.

a. 2

b. 1

c. 5

2. Determine if the given number is a solution to $x > 1$ or $x \leq 2$.

a. 2

b. 1

c. 5

3. Determine if the given number is a solution to $x \leq 1$ or $x > 2$.

a. 2

b. 1

c. 5

4. Write the following compound inequalities as triple inequalities or state that it cannot be done.

a. $x > 1$ and $x \leq 2$

b. $x < 1$ and $x \geq 2$

c. $x < 1$ or $x \geq 2$

5. Write the following compound inequalities in interval, set, and number-line notation. Condense when possible.

a. $-8 < x \leq 5$

c. $x < -4$ or $x \leq 1$

b. $-6 > x$ or $x \geq 8$

d. $-2 < x$ and $x \geq 4$

6. Solve the following compound inequalities.

a. $-7 < 20 - x \leq -2$

d. $-4x + 20 > -7$ and $14x - 13 \geq -5$

b. $12 \leq x + 6 < 17$

e. $5x - 20 \geq -4$ or $-4x - 15 \geq 15$

c. $16x + 10 \leq -17$ and $5x - 1 < 3$

f. $12 > -3 - \frac{5}{4}x \geq -23$