



Writing a Compound Inequality

• Example 1

Express “5 is greater than or equal to x and 2 is less than or equal to x ” as one algebraic expression. Note that the phrase is made up of two statements joined by “AND.”

Since 5 is greater than or equal to x we have $5 \geq x$ or $x \leq 5$. Also, 2 is less than or equal to x , giving $2 \leq x$. Combining these two inequalities because they must both be satisfied, we have

$$2 \leq x \text{ AND } x \leq 5$$

or, in abbreviated form,

$$2 \leq x \leq 5.$$

● ● ● CHECK YOURSELF 1

Express “2 is more than x and -3 is less than x ” as one algebraic expression.

● ● ● CHECK YOURSELF ANSWER

1. $-3 < x < 2$.

1.7 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

Write the following compound inequalities as algebraic expressions.

1. 10 is greater than or equal to x and 0 is less than or equal to x .

2. -5 is less than x and -2 is more than x .

3. 0 is greater than x and -15 is less than x .

4. 25 is less than or equal to x and 75 is greater than x .

5. 4 is greater than x and -2 is less than or equal to x .

6. 12 is less than x and 69 is greater than or equal to x .

7. -5 is greater than or equal to x and -82 is less than or equal to x .

8. -4 is less than x and x is less than or equal to 4.