

Solving Linear Inequalities Video Lecture

Section 2.8

Course Learning Objectives:

- 1) Solve linear inequalities.**
- 2) Solve applications of linear inequalities.**

Weekly Learning Objectives:

- 1) Define a linear inequality in one variable, graph solution sets on a number line, and use interval notation.**
- 2) Solve linear inequalities.**
- 3) Solve compound inequalities.**
- 4) Solve inequality applications.**

Solving Linear Inequalities

Less than

Greater than

Less than or equal to

Greater than or equal to

Not equal to

Interval Notation: Shorthand notation for solutions to inequalities

(,) used for open circles and $<$ or $>$

[,] used for closed circles and \leq or \geq

Note: Always use (,) around infinity

Examples:

$$x < 1$$

$$x \geq 1$$

$$-3 \leq x < 5$$

$$x < 1 \text{ or } x \geq 5$$

Solving Linear Inequalities

$$5x - 2 < 4x - 5$$

$$-k < 0$$

$$2y - (4y - 3) > 6y + 3(y + 4)$$

$$4 - (2 - x) < x + 1$$

$$-8 \leq 3r - 1 \leq -1$$

$$2 < 6 - \frac{3}{4}y < 1$$

Solve by writing and solving an inequality:

When 2 is added to the difference between six times a number and 5, the result is greater than 13 added to 5 times the number. Find all such numbers.

Suppose that you received grades of 94 and 82 on your first two math test and you want to know what possible scores on the third test will give you an average of at least 90:

