

# Inequalities Hexagonal Jigsaw

The three diagrams on the following pages will ultimately fit together to form a large hexagon.

Before you start, the three diagrams must be cut along the lines to make twenty-four equilateral triangles. For the triangles to be fitted together, you must find an inequality and its solution.

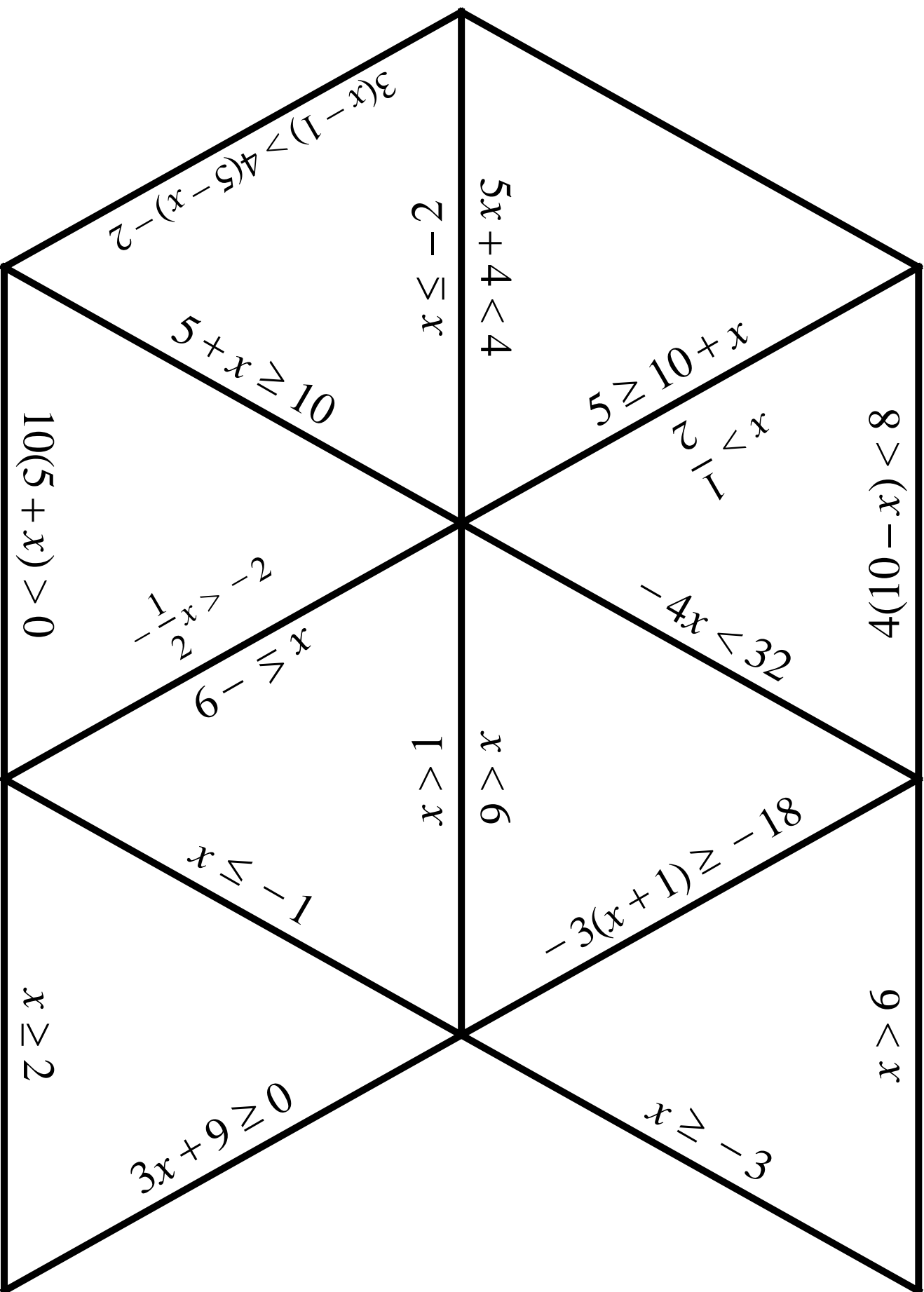
To build up the puzzle, place together the edges on which an inequality and its solution are written, so that the triangles are joined along this edge.

Begin by just finding pairs of inequalities and solutions and placing them edge-to-edge.

As you progress you will find that all of the pieces will eventually link up to form a large hexagon.

By all means try this by yourself, but it is really designed to be a group activity. Working with other students will help to highlight any misconceptions you may have, as well as making the task more enjoyable.

At first glance this may appear to be an easy undertaking, but you will find it takes quite a lot of thought and errors can be made very easily. Make sure you check each coupling, or you could be left with one or two pieces that appear to fit nowhere.



$$3(x-1) > 4(5-x)-2$$

$$5x+4 < 4$$

$$2-x <= x$$

$$5 >= 10+x$$

$$x > 1$$

$$2 < x$$

$$4(10-x) < 8$$

$$-4x < 32$$

$$10(5+x) > 0$$

$$-\frac{1}{2}x > -2$$

$$6-x <= x$$

$$x > 1$$

$$x < 6$$

$$-3(x+1) >= -18$$

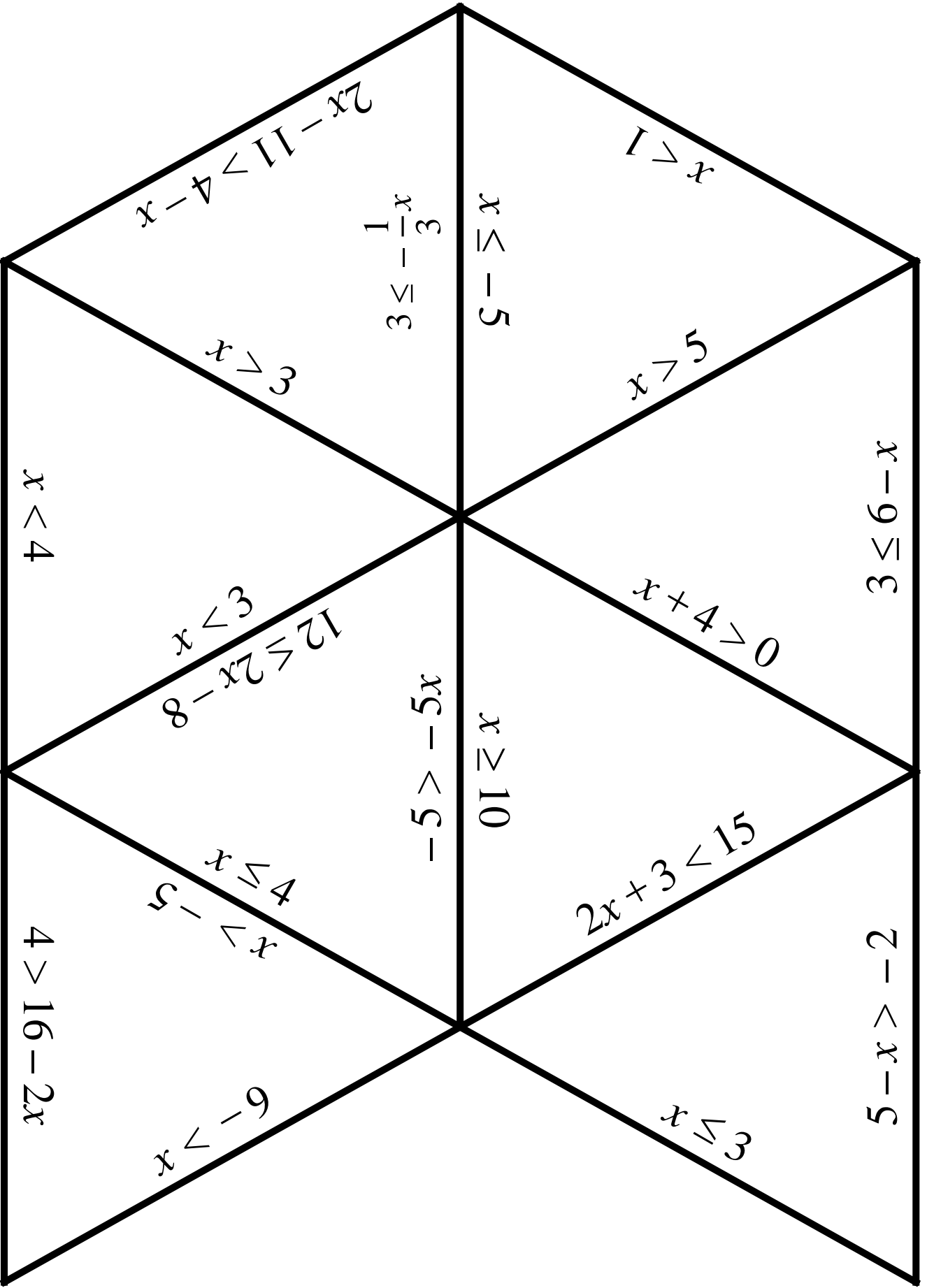
$$x <= -1$$

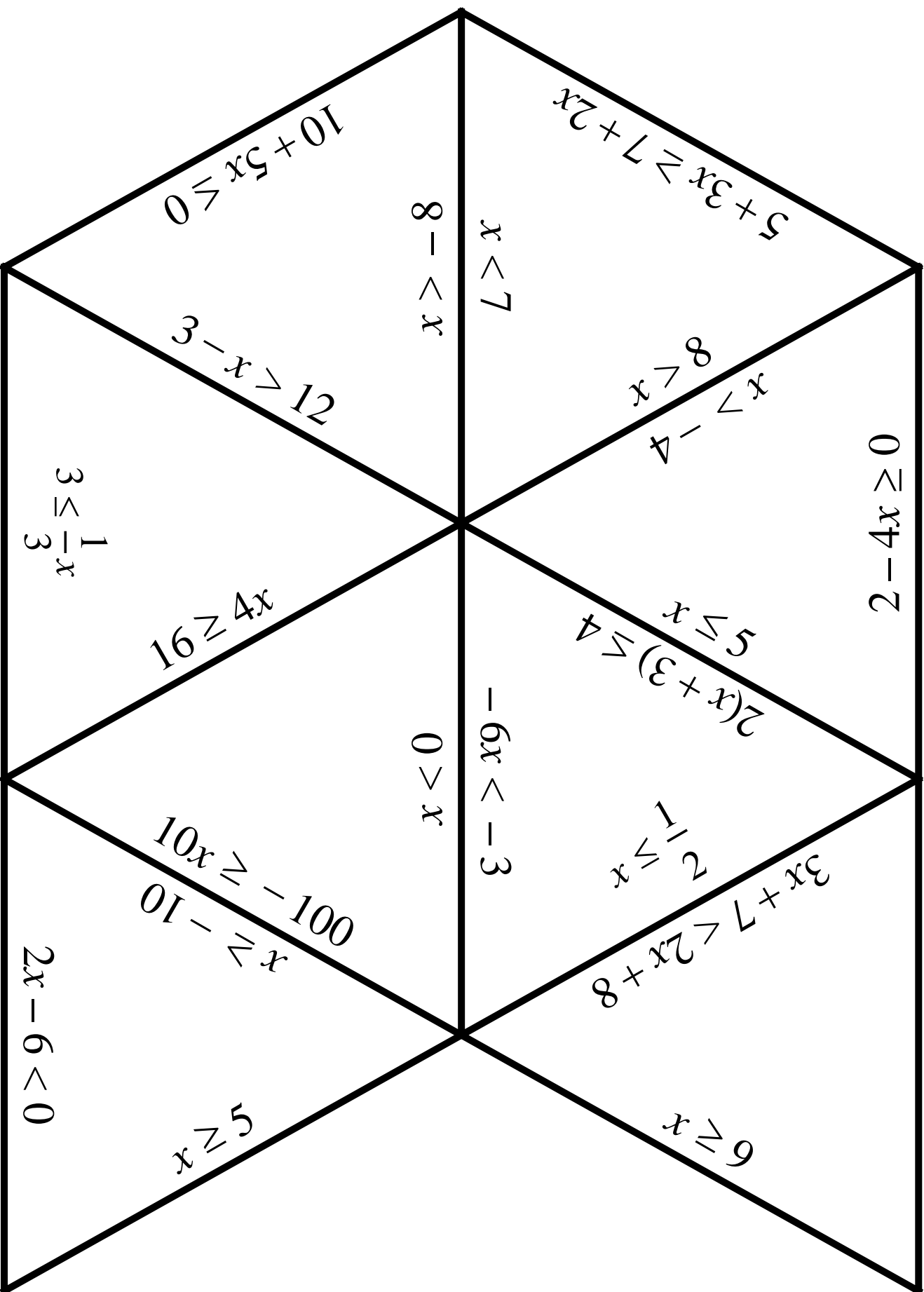
$$x > 6$$

$$x >= 2$$

$$3x+9 >= 0$$

$$x >= -3$$





$$5 + 3x \geq 7 + 2x$$

$$x < 7$$

$$8 - x < 8$$

$$2 - 4x \geq 0$$

$$10 + 5x \leq 0$$

$$3 - x > 12$$

$$4 - x > 4$$

$$2(x + 3) \leq 4$$

$$16 \geq 4x$$

$$x \leq 5$$

$$-6x < -3$$

$$0 > x$$

$$10x \geq -100$$

$$x \geq -10$$

$$3x + 7 < 2x + 8$$

$$x \leq \frac{1}{2}$$

$$2x - 6 < 0$$

$$x \geq 5$$

$$6 \geq x$$

$$3 \leq \frac{1}{3}x$$