3.4) Linear inequalities

Worked example	Your turn
Solve:	Solve:
$3x < 12$	$15 \geq 3x - 6$
	$x \leq 7$
$4x - 1 > 15$	
$11 \leq 2x - 5$	

Worked example	Your turn
Solve: $5x + 2 < 3x - 4$	Solve: $4x - 3 \geq 2 - x$
	$x \geq 1$
$3x + 2 \leq 5x - 4$	
$3x + 2 > 4 - 5x$	

Worked example

Solve:

$$-x < 2$$

$$-x \geq -3$$

Your turn

Solve:

$$-x \leq -4$$

$$x \geq 4$$

Worked example	Your turn
Solve: $-x < 12$	Solve: $-4x + 5 \leq 17$
$12 < -2x$	$x \geq -3$
$16 \geq -3x + 4$	

Worked example

If $x < 3$ and $2 \leq x < 4$, what is the combined solution set?

Your turn

If $x < 3$ and $2 \leq x < 4$, what is the combined solution set?

$2 \leq x < 3$

Worked example

Use set notation to describe the set of values for which:

$$10(9x + 8) < 7 \text{ or } 6(5x - 4) \geq \frac{3-2x}{4}$$

Your turn

Use set notation to describe the set of values for which:

$$2(3x + 4) < 5 \text{ or } 6(7x - 8) \geq \frac{9-10x}{2}$$

$$\left\{x : x < -\frac{1}{2}\right\} \cup \left\{x : x \geq \frac{105}{94}\right\}$$