

$$1) \quad \frac{3(2x+1)}{4} > -6$$

$$\frac{6x+3}{4} > -6$$

$$6x+3 > -24$$

$$6x > -24-3$$

$$6x > -27$$

$$x > -\frac{27}{6}$$

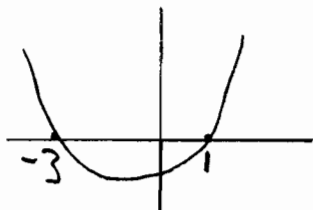
$$x > -\frac{9}{2}$$

$$2) \quad x^2 + 2x < 3$$

$$x^2 + 2x - 3 < 0$$

$$(x+3)(x-1) < 0$$

Sketch $y = x^2 + 2x - 3$



Determine when $y < 0$

Solution:

$$-3 < x < 1$$

$$3) \quad 1 - 2x < 4 + 3x$$

$$-2x - 3x < 4 - 1$$

$$-5x < 3$$

$$x > \frac{3}{-5}$$

$$x > -\frac{3}{5}$$

$$4) \quad 3x - 1 > 5 - x$$

$$3x + x > 5 + 1$$

$$4x > 6$$

$$x > \frac{6}{4}$$

$$x > \frac{3}{2}$$

$$5) \quad 7 - x < 5x - 2$$

$$-x - 5x < -2 - 7$$

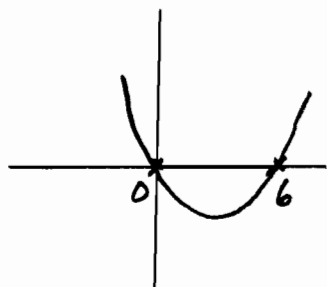
$$-6x < -9$$

$$x > \frac{-9}{-6}$$

$$x > \frac{3}{2}$$

$$6) \quad x(x-6) > 0$$

Sketch $y = x(x-6)$



Determine where $y > 0$

Solution:

$$\text{Either } x < 0$$

$$\text{or } x > 6$$

$$7) \quad 2(x-3) < 6x+15$$

$$2x-6 < 6x+15$$

$$2x-6x < +15+6$$

$$-4x < 21$$

$$x > \frac{21}{-4}$$

$$x > -\frac{21}{4}$$

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