

Written assignments
to hand in.

Section 1.6

24, 32, 44, 50

Due Friday 10/6

Section 1.7

30, 42, 66

Due Tuesday 10/10

Section 1.8

16, 34, 40

Due Wednesday 10/11

Discussion Problems

From the department syllabus
These are not to hand in.

Section 1.7, 1.8

WebAssign

Section 1.6

Due Friday 10/6, 9pm

Sections 1.7+1.8

Due Wednesday 10/11, 9pm

1.7

(15) Solve the inequality

$$2 - 3x > 8$$

$$-2 \quad -2$$

$$-\frac{1}{3}(-3x > 6)$$

$$\boxed{x < -2}$$



(27)

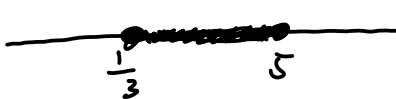
$$-6 \leq 3x - 7 \leq 8$$

$$+7 \quad +7 \quad +7$$

$$\frac{1}{3}(1 \leq 3x \leq 15)$$

$$\boxed{\frac{1}{3} \leq x \leq 5}$$

3 expressions, 2 inequalities.



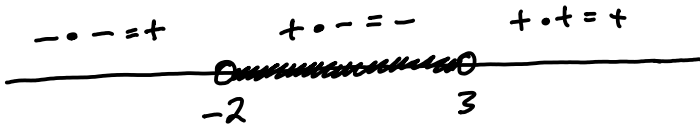
$$\left[\frac{1}{3}, 5\right]$$

33) $(x+2)(x-3) < 0$ Solve for x .

$$(x+2)(x-3) = 0$$

$$x+2=0 \text{ or } x-3=0$$

$$x=-2 \quad x=3$$



$$(x+2)(x-3)$$

$$(-2, 3), \quad -2 < x < 3$$

39) $2x^2 + x \geq 1$

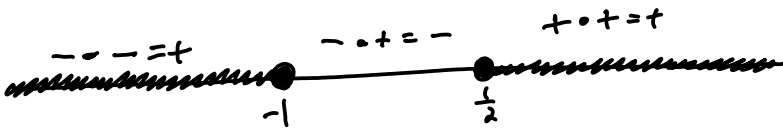
$$(2x-1)(x+1) = 0$$

$$2x-1=0, \quad x+1=0$$

$$2x^2 + x - 1 \geq 0$$

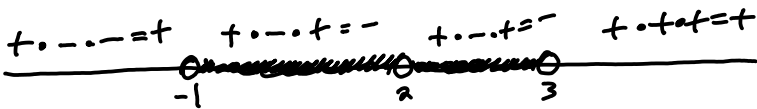
$$x = \frac{1}{2}, \quad x = -1$$

$$(2x-1)(x+1) \geq 0$$



$$(-\infty, -1] \cup [\frac{1}{2}, +\infty), \quad x \leq -1 \text{ or } x \geq \frac{1}{2}.$$

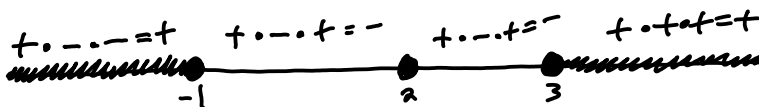
51) $(x-2)^2(x-3)(x+1) < 0$



$$(-1, 2) \cup (2, 3)$$

Similar problem

$$(x-2)^2(x-3)(x+1) \geq 0$$



$$(-\infty, -1] \text{ or } 2 \text{ or } [3, +\infty)$$

(57)

$$\frac{4x}{2x+3} > 2$$

$$\frac{4x}{2x+3} - 2 > 0$$

$$\frac{4x}{2x+3} - 2 \frac{2x+3}{2x+3} > 0$$

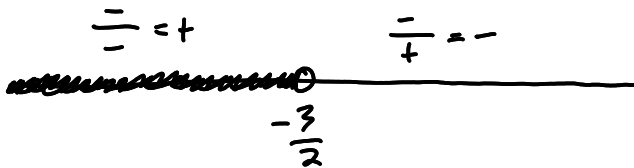
$$\frac{4x}{2x+3} - \frac{4x+6}{2x+3} > 0$$

$$\frac{4x - (4x+6)}{2x+3} > 0$$

$$\frac{-6}{2x+3} > 0$$

numerator = 0 never

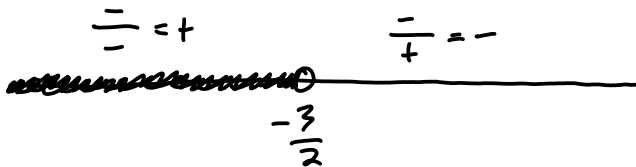
denominator = 0 $2x+3=0$
 $x = -\frac{3}{2}$



$$\left(-\infty, -\frac{3}{2}\right)$$

Similar problem

$$\frac{-6}{2x+3} \geq 0$$



$$\left(-\infty, -\frac{3}{2}\right) \quad \text{same answer.}$$

63

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

$$0 \leq \frac{2}{x} - \frac{2}{x+1} - 1 \quad \text{LCD } x(x+1)$$

$$0 \leq \frac{2}{x} \frac{x+1}{x+1} - \frac{2}{x+1} \frac{x}{x} - \frac{x(x+1)}{x(x+1)}$$

$$0 \leq \frac{2x+2}{x(x+1)} - \frac{2x}{x(x+1)} - \frac{x^2+x}{x(x+1)}$$

$$0 \leq \frac{2x+2-2x-(x^2+x)}{x(x+1)}$$

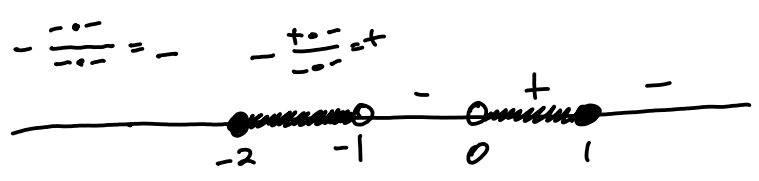
$$0 \leq \frac{2-x^2-x}{x(x+1)}$$

$$0 \leq -\frac{x^2+x-2}{x(x+1)}$$

$$0 \leq -\frac{(x+2)(x-1)}{x(x+1)}$$

numerator = 0 $x = -2, 1$

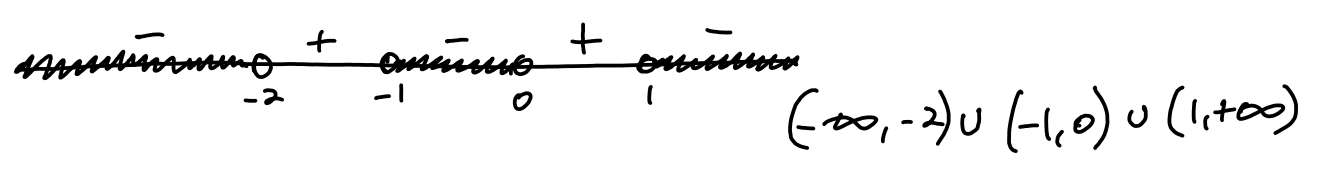
denominator = 0 $x = -1, 0$



$$[-2, -1) \cup (0, 1]$$

Similar problem

$$0 > -\frac{(x+2)(x-1)}{x(x+1)}$$



$$(-\infty, -2) \cup (-1, 0) \cup (1, \infty)$$