

2.6 #s 8, 40, 44, 53, 68

2.7 #s 12, 22, 65, 66, 74, 77

§ 2.5 #55

$$3x \geq 5 \quad \text{OR} \quad -\frac{5}{8}x - 6 > 1$$

$$x \geq \frac{5}{3} \quad -\frac{5}{8}x > 7$$

$$\left(-\frac{8}{5}\right)\left(-\frac{5}{8}x\right) < (7)\left(-\frac{8}{5}\right)$$

$$x < -\frac{56}{5}$$

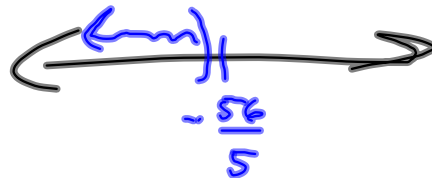
$$-\frac{5}{8}x - 6 > 1$$

$$-\frac{5}{8}x > 7 \quad \text{LCD} = 8$$

$$(8)\left(-\frac{5}{8}x\right) > 8(7)$$

$$-5x > 56$$

$$x < \frac{56}{-5}$$



$$x \in \left(-\infty, -\frac{56}{5}\right) \quad \text{Interval}$$

$$= \left\{ x \mid x < -\frac{56}{5} \right\} \quad \text{Set-builder.}$$

§ 2.6 Absolute Value Equations

$$|3x-2| = 6$$

$$3x-2 = 6 \quad \text{OR} \quad 3x-2 = -6$$

$$3x = -4$$

$$3x = 8$$

$$x = -\frac{4}{3}$$

$$x = \frac{8}{3} \quad \text{OR}$$

$$x \in \left\{ -\frac{4}{3}, \frac{8}{3} \right\}$$

$$|3x-2| = -6 \text{ Never!}$$

$$|x| = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$

$$|3| = 3$$

$$|-3| = -(-3) = +3$$

$$|\text{☺}| = -5$$

$$\begin{aligned} &|\text{☺}| = 5 \\ &\text{☺} = 5 \text{ OR } \text{☺} = -5 \end{aligned}$$

$$2 + |5x - 7| = 9$$

$$\begin{array}{r} -2 \qquad \qquad \qquad = -2 \\ \hline |5x - 7| = 7 \end{array}$$

$$\begin{array}{r} 5x - 7 = 7 \\ +7 = +7 \\ \hline 5x = 14 \end{array}$$

OR

$$\begin{array}{r} 5x - 7 = -7 \\ +7 = +7 \\ \hline 5x = 0 \end{array}$$

$$x = \frac{14}{5} \quad \text{OR}$$

$$x = \frac{0}{5} = 0 = x$$

$$x \in \left\{ 0, \frac{14}{5} \right\}$$

$$\frac{5}{0} \quad \text{is crossed out}$$

$$|3x+7| = |5x-3|$$

$$3x+7 = 5x-3 \quad \text{OR} \quad 3x+7 = -(5x-3)$$

etc. etc.

§ 2.7

$$|3x-2| < 6$$

$$3x-2 < 6 \quad \text{AND} \quad 3x-2 > -6$$

etc.

$$|3x-2| > 6$$

$$3x-2 > 6 \quad \text{OR} \quad 3x-2 < -6$$

etc.

$$\begin{array}{l} \rightarrow |3x-2| < -77 \quad \text{Never!} \quad \emptyset \\ \rightarrow |3x-2| > -6 \quad \text{Always} \quad \mathbb{R} \end{array}$$

$$| \text{☺} | \geq 0$$

$$\left| \frac{2r-6}{5} \right| = |-2| = 2$$

$$\left| \frac{2r-6}{5} \right| = 2$$

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$$\frac{2r-6}{5} = 2 \quad \text{OR} \quad \frac{2r-6}{5} = -2$$

$$\frac{|2r-6|}{|5|} = \frac{|2r-6|}{5} = 2$$
$$|2r-6| = 10$$

$$\left| \frac{5d+1}{6} \right| = -|-9| = -9$$

$\rightarrow |-9| \text{ is } 9$