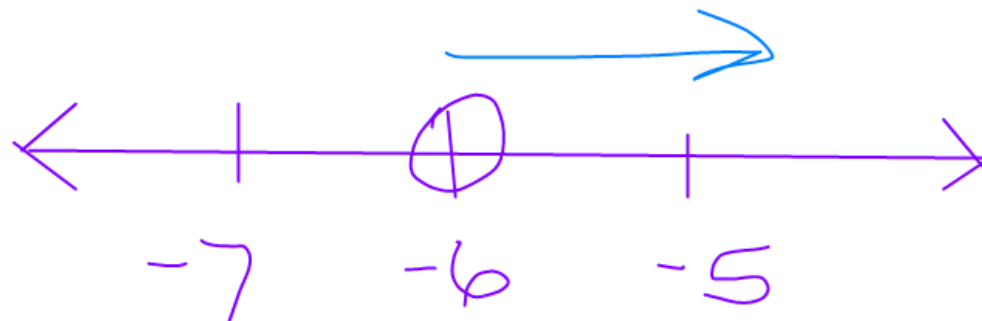


4.3 - Solving Inequalities with Multiplication and Division

1 EXAMPLE Solve $\frac{z}{3} > -2$. Graph and check the solution.

$$\cancel{3} \cdot \frac{z}{\cancel{3}} > -2 \cdot 3$$

$$z > -6$$

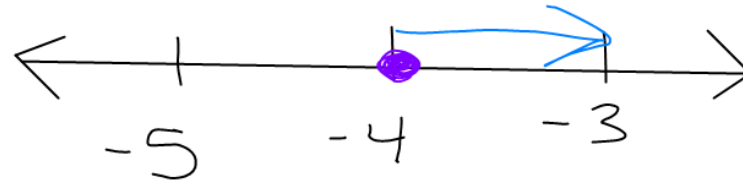


$$\frac{0}{3} > -2$$

$$0 > -2 \checkmark$$

$$1. \quad \cancel{4} \cdot \frac{t}{\cancel{4}} \geq -1 \cdot 4$$

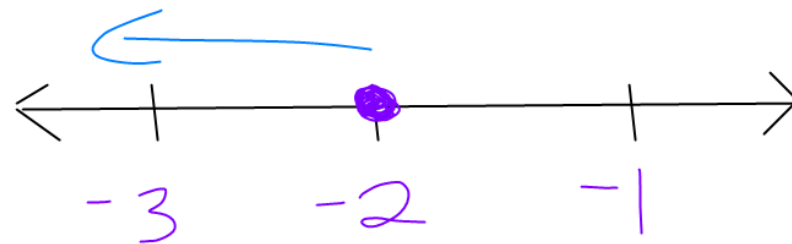
$$t \geq -4$$



$$3. \quad 1 \leq -\frac{w}{2}$$

$$-2 \cdot 1 \leq \frac{w}{\cancel{-2}} \cdot \cancel{2}$$

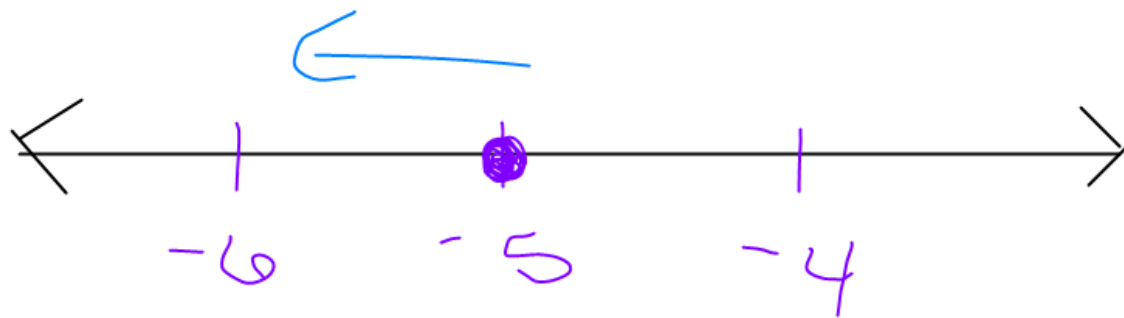
$$-2 \geq w$$



2 EXAMPLE Solve $3 \leq -\frac{3}{5}x$. Graph and check the solution.

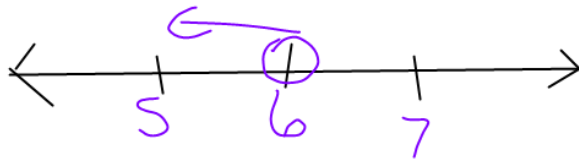
~~$3 \leq -\frac{3}{5}x$~~ ~~$+5$~~ ~~\times~~ ~~$+5$~~ ~~3~~

~~$-5 \leq -x$~~



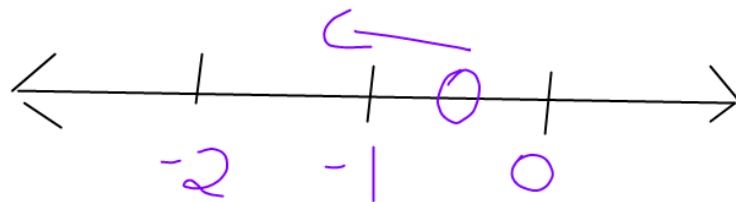
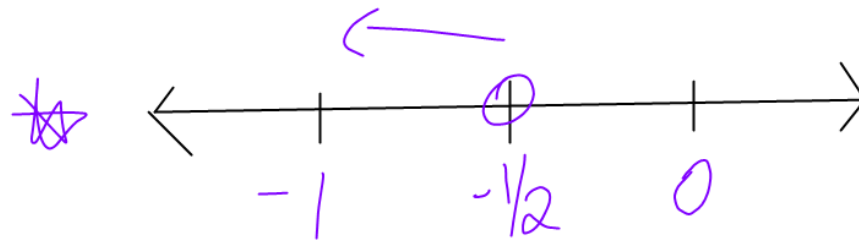
$$7,3 \cdot 42 > \frac{2}{3}x \cdot \frac{1}{10}$$

$$6 > x$$



$$15 + 3 + \frac{5}{3}u > \frac{5}{2} \cdot \frac{-1}{1}$$

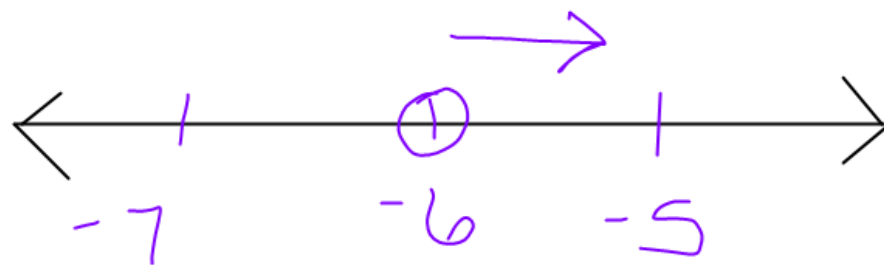
$$u < -\frac{1}{2}$$



3 EXAMPLE Solve $-4c < 24$. Graph the solution.

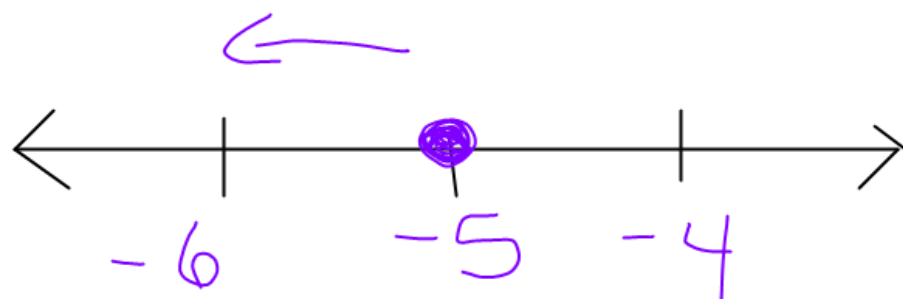
$$\frac{-4c}{-4} < \frac{24}{-4}$$

$$c > -6$$



$$19. \quad \frac{10}{-2} \leq \frac{-2w}{-2}$$

$$-5 \geq w$$



4 EXAMPLE Your family budgets \$160 to spend on fuel for a trip. How many times can they fill the car's gas tank if it cost \$25 each time?

$$\begin{array}{r} 25x \leq 160 \\ \hline 25 \end{array}$$

$$x \leq 6.4$$

6 times

29. **Fund-Raising** The science club charges \$4.50 per car at their car wash. Write and solve an inequality to find how many cars they have to wash to earn at least \$300.

$$\frac{4.5V}{4.5} \geq \frac{300}{4.5}$$

$$V \geq 66.\bar{6}$$

67 times

Homework: pg. 215 #2, 6, 8, 14, 18, 24, 30, 56, 75, 90, 99