

## Review – Solving Equations

a.  $-2 = -\frac{1}{3}n + 5$   
 $\rightarrow \frac{-5}{(-1)} = \frac{-5}{(-\frac{1}{3}n)}$   
 $21 = n$

b.  $4(-6 + p) = -4$   
 $-24 + 4p = -4$   
 $\frac{+24}{+24} \quad \frac{+24}{+24}$   
 $\frac{4p}{4} = \frac{20}{4}$   
 $p = 5$

c.

## Inequalities

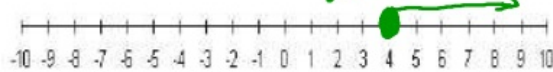
1. Graph  $x > -2$ 2. Graph  $4.5 \geq u$ 

$$u \leq 4.5$$

3. Solve and graph  $3j - 12 \geq 0$ 

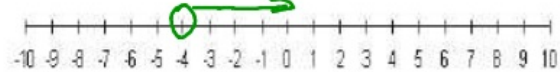
$$\frac{+12}{3} \geq \frac{+12}{3}$$

$$j \geq 4$$

4. Solve and graph  $-3r < 12$ 

$$\frac{-3r}{-3} < \frac{12}{-3}$$

$$r > -4$$

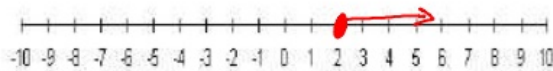
5. Solve and graph  $-5 \geq -2v - 1$ 

$$\frac{+1}{-2} \geq \frac{+1}{-2}$$

$$\frac{-4}{-2} \geq \frac{-2v}{-2}$$

$$2 \leq v$$

$$v \geq 2$$

6. Solve and graph  $8 \geq -2(-1 + m)$ 

$$\frac{8}{-2} \geq \frac{2 - 2m}{-2}$$

$$\frac{-4}{-2} \geq \frac{-2m}{-2}$$

$$-3 \leq m$$

$$m \geq -3$$

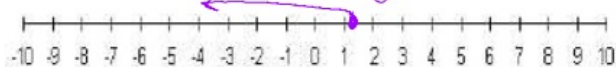
7. Solve and graph:  $16 - 7y \geq 10y - 4$ 

$$\frac{-10y}{-17} \geq \frac{-10y}{-17}$$

$$\frac{16 - 17y}{-16} \geq \frac{-4}{-16}$$

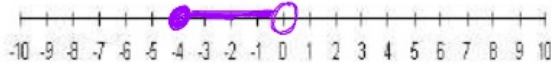
$$\frac{-17y}{-17} \geq \frac{-20}{-17}$$

$$y \leq 1.1764$$



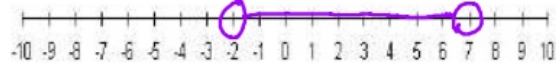
## Compound Inequalities

8. Graph:  $-4 \leq x < 0$

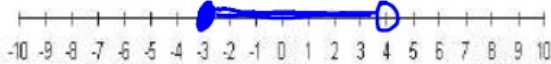


$$-2 < x < 7$$

9. Graph:  $7 > x > -2$



9. Solve and graph:  $-1 \leq 2x + 5 < 13$



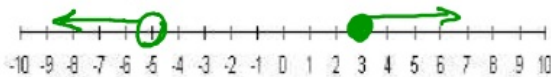
$$\begin{aligned} -1 &\leq 2x + 5 < 13 \\ -5 &\quad -5 \quad -5 \\ \hline -6 &\leq 2x < 8 \\ \frac{-6}{2} &\leq \frac{2x}{2} < \frac{8}{2} \\ -3 &\leq x < 4 \end{aligned}$$

10. Solve and graph:  $-15 < -5h + 25 < 45$

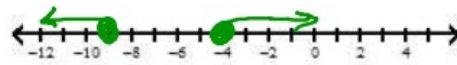


$$\begin{aligned} -15 &< -5h + 25 < 45 \\ -25 &\quad -25 \quad -25 \\ \hline -40 &< -5h < 20 \\ \frac{-40}{-5} &< \frac{-5h}{-5} < \frac{20}{-5} \\ 8 &> h > -4 \\ -4 &< h < 8 \end{aligned}$$

11. Graph:  $x < -5$  or  $x \geq 3$



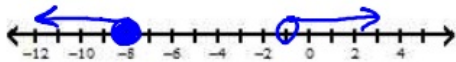
12. Solve and graph:  $10n + 8 \geq -32$  or  $8 + 5n \leq -37$



$$\begin{aligned} 10n + 8 &\geq -32 \\ -8 &\quad -8 \\ \hline 10n &\geq -40 \\ \frac{10n}{10} &\geq \frac{-40}{10} \\ n &\geq -4 \end{aligned}$$

$$\begin{aligned} 8 + 5n &\leq -37 \\ -8 &\quad -8 \\ \hline 5n &\leq -45 \\ \frac{5n}{5} &\leq \frac{-45}{5} \\ n &\leq -9 \end{aligned}$$

13. Solve and graph:  $7y + 9 > 2$  or  $9y + 8 \leq -64$



$$\begin{aligned} 7y + 9 &> 2 \\ -9 &\quad -9 \\ \hline 7y &> -7 \\ \frac{7y}{7} &> \frac{-7}{7} \\ y &> -1 \end{aligned}$$

$$\begin{aligned} 9y + 8 &\leq -64 \\ -8 &\quad -8 \\ \hline 9y &\leq -72 \\ \frac{9y}{9} &\leq \frac{-72}{9} \\ y &\leq -8 \end{aligned}$$

**Homework:** Worksheet on Equations, Inequalities, and Compound Inequalities