

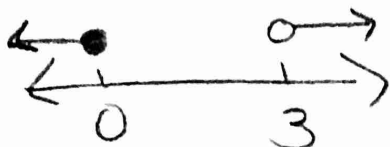
"OR" → solution set can be one or the other or both

Name: key

Compound Inequalities Worksheet: Unions ★ = special case

Solve and graph each of the following inequalities. Show all your work.

1.) $b \leq 0$ or $b > 3$



2.) $-1 > y$ or $y \geq 1$

$y < -1$ or $y \geq 1$



3.) $-4 > y - 5$ or $y - 5 \geq 1$
 $+5$ $+5$ $+5$ $+5$

$1 > y$
 $y < 1$ or $y \geq 6$



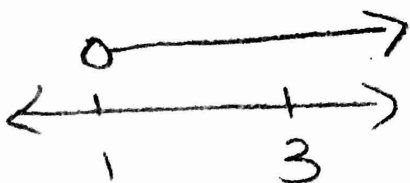
4.) $-10 \leq x$ or $x < 0$

★ $x \geq -10$ or $x < 0$



★ 5.) $\frac{3}{3} < \frac{3w}{3}$ or $\frac{3w}{3} \geq \frac{9}{3}$

$1 < w$
 $w > 1$ or $w \geq 3$



6.) $w + 3 \leq 0$ or $w + 7 \geq 9$
 -3 -3 -7 -7

$w \leq -3$ or $w \geq 2$



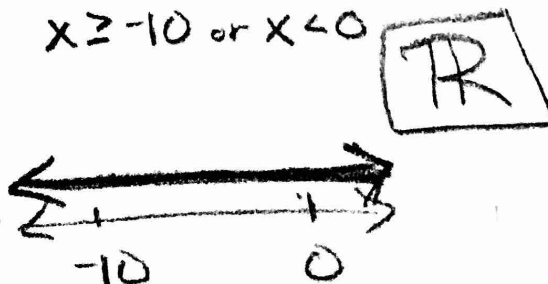
7.) $-2 \geq p - 2$ or $p - 2 > 1$
 $+2$ $+2$ $+2$ $+2$

$0 \geq p$ $p > 3$
 $p \leq 0$ or $p > 3$



★ 8.) $-2 \leq \frac{x}{5}$ or $\frac{x}{5} < 0.4$

$-10 \leq x$ $x < 0$
 $x \geq -10$ or $x < 0$



9.) $2y + 2 < 12$ or $y - 3 \geq 2y$

$$\frac{2y + 2}{-2} < \frac{10}{-2} \quad \frac{y - 3}{-1} \geq \frac{2y}{-1}$$

$$\frac{2y}{2} < \frac{10}{2} \quad -3 \geq y$$

$$y < 5 \text{ or } y \leq -3$$

10.) $-3p + 1 \leq -11$ or $p < 2$

$$\frac{-3p + 1}{-3} \leq \frac{-12}{-3} \quad p < 2$$

FLIP!

$$p \geq 4 \quad p < 2 \text{ or } p \geq 4$$

11.) $5 < 3x - 1$ or $3x - 1 > 11$

$$\frac{6}{3} < \frac{3x}{3} \quad \frac{3x}{3} > \frac{12}{3}$$

$$2 < x \quad x > 4$$

$$x > 2 \text{ or } x > 4$$

12.) $k - 3 < -7$ or $k + 5 \geq 8$

$$\frac{k - 3}{+3} < \frac{-7}{+3} \quad \frac{k + 5}{-5} \geq \frac{8}{-5}$$

$$k < -4 \text{ or } k \geq 3$$

13.) $11x + 10 \geq -12$ or $5x - 1 \geq 9$

$$\frac{11x + 10}{-11} \geq \frac{-22}{-11} \quad \frac{5x - 1}{-5} \geq \frac{10}{-5}$$

$$x \geq -2 \text{ or } x \geq 2$$

14.) $-4 > k + 7$ or $k + 7 \geq 8$

$$\frac{-4 - 7}{-1} > \frac{k + 7}{-1} \quad \frac{k + 7}{-1} \geq \frac{8 - 7}{-1}$$

$$-11 > k \text{ or } k \geq 1$$

$$k < -11 \text{ or } k \geq 1$$

15.) $-8 \geq 2x + 4$ or $2x + 4 \geq 12$

$$\frac{-8 - 4}{2} \geq \frac{2x}{2} \quad \frac{2x + 4}{-2} \geq \frac{8}{-2}$$

$$-6 \geq x \quad x \geq 4$$

$$x \leq -6 \text{ or } x \geq 4$$

16.) $-26 > 7x + 2$ or $7x + 2 \leq 16$

$$\frac{-26 - 2}{7} > \frac{7x}{7} \quad \frac{7x + 2}{-7} \leq \frac{14}{-7}$$

$$-4 > x \quad x < -4 \text{ or } x \leq 2$$