

Topic 1 // 2.1 (Inequalities) // Practice C

→ Use separate piece of paper

A. Decide whether the number is a solution of the inequality. (Yes or No)

1) $3x + 5 \leq 20$, 4

$$\begin{aligned} -5 & -5 \\ \hline 3x & \leq 15 \\ \frac{3x}{3} & \frac{15}{3} \\ x & \leq 5 \end{aligned}$$

Yes

2) $6 - 2y > 10$, -2

$$\begin{aligned} -6 & -6 \\ \hline -2y & > 4 \\ \frac{-2y}{-2} & \frac{4}{-2} \\ y & < -2 \end{aligned}$$

No

3) $-4 \leq w + 5$, -2

$$\begin{aligned} -9 & -9 \\ \hline -9 & \leq w \\ \frac{-9}{1} & \frac{-9}{1} \\ w & \geq -9 \end{aligned}$$

Yes

B. Solve and graph the following inequalities

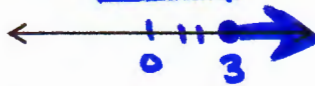
4) $x - 3 < -6$

$$\begin{aligned} +3 & +3 \\ \hline x & < -3 \end{aligned}$$



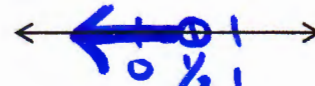
5) $2y + 1 \geq 7$

$$\begin{aligned} -1 & -1 \\ \hline 2y & \geq 6 \\ \frac{2y}{2} & \frac{6}{2} \\ y & \geq 3 \end{aligned}$$



6) $-6a - 5 > -8$

$$\begin{aligned} +5 & +5 \\ \hline -6a & > -3 \\ \frac{-6a}{-6} & \frac{-3}{-6} \\ a & < \frac{1}{2} \end{aligned}$$



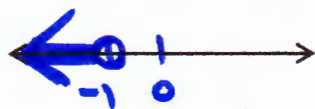
7) $5x - 3 \leq 2x + 6$

$$\begin{aligned} -2x & -2x \\ \hline 3x & \leq 9 \\ \frac{3x}{3} & \frac{9}{3} \\ x & \leq 3 \end{aligned}$$



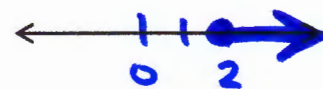
8) $9 - 3k > 12$

$$\begin{aligned} -9 & -9 \\ \hline -3k & > 3 \\ \frac{-3k}{-3} & \frac{3}{-3} \\ k & < -1 \end{aligned}$$



9) $-2x \geq -8x + 12$

$$\begin{aligned} +8x & +8x \\ \hline 6x & \geq 12 \\ \frac{6x}{6} & \frac{12}{6} \\ x & \geq 2 \end{aligned}$$



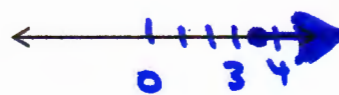
10) $-\frac{1}{2}x - 5 < -2$

$$\begin{aligned} +5 & +5 \\ \hline -\frac{1}{2}x & < 3 \\ \left(-\frac{2}{1}\right) \frac{-\frac{1}{2}x}{1} & \frac{3}{1} \left(-\frac{2}{1}\right) \\ x & > -6 \end{aligned}$$



11) $2x - 7 \geq 0$

$$\begin{aligned} +7 & +7 \\ \hline 2x & \geq 7 \\ \frac{2x}{2} & \geq \frac{7}{2} \\ x & \geq 3\frac{1}{2} \end{aligned}$$



$3\frac{1}{2} = 3\frac{1}{2}$

12) $9a + 4 \leq 12a - 11$

$$\begin{aligned} -9a & -9a \\ \hline 4 & \leq 3a - 11 \\ +11 & +11 \\ 15 & \leq 3a \\ \frac{15}{3} & \frac{3a}{3} \\ 5 & \leq a \text{ or } a \geq 5 \end{aligned}$$

