

HOMWORK: ABS VAL INEQUALITIES



NAME: _____ TARGET SCORE: ____/10 DAY 6

Spiral review for everyone...1 point each

| | |
|---|---|
| <p>1. Solve. $2 < -x + 3 < 8$</p> $\frac{-3}{-3} \frac{-3}{-3} \frac{-3}{-3}$ $\frac{-5 < x < 1}{-1 < -x < 5}$ $\frac{1}{-1} \frac{1}{-1} \frac{1}{-1}$ $1 > x > -5$ <p>$-5 < x < 1$</p> | <p>2. Simplify: $5 - 1(6 + 2)$</p> $5 - 1(8)$ <p>-3</p> |
| <p>3. Solve. $\frac{1}{2}x - 2 = 14$</p> $\frac{1}{2}x - 2 = 14$ $\frac{1}{2}x = 16$ $x = 8$ <p>$x = 8, -24$</p> <p>4. Solve. $\frac{3}{2} \left(\frac{2}{3}x \right) = 10 \cdot \frac{3}{2}$</p> $x = \frac{30}{2}$ <p>$x = 15$</p> | <p>4. Solve. $\frac{3}{2} \left(\frac{2}{3}x \right) = 10 \cdot \frac{3}{2}$</p> $x = \frac{30}{2}$ <p>$x = 15$</p> |

Solve.

| | |
|---|---|
| <p>5. $3x - 4 = x$ (1 point)</p> $\frac{3x - 4 = x}{-3x} \frac{3x - 4 = -x}{-3x}$ $\frac{-4 = -2x}{-2} \frac{-4 = -4x}{-4}$ <p>$2 = x$ $1 = x$</p> | <p>7. $4x + 10 = 6x$ (2 points)</p> $\frac{4x + 10 = 6x}{-4x} \frac{4x + 10 = -6x}{-4x}$ $\frac{10 = 2x}{2} \frac{10 = -10x}{-10}$ $5 = x$ <p>$x = 5$</p> <p>$-1 = x$ $x + 1$</p> |
| <p>6. $4x + 2 \geq 7$ (1 point)</p> $\frac{4x + 2 \geq 7}{-2} \frac{4x + 2 \leq -7}{-2}$ $\frac{4x \geq 5}{4} \frac{4x \leq -9}{4}$ <p>$x \geq 5/4$ $x \leq -9/4$</p> | |

Solve and Graph.

| | |
|---|---|
| <p>8. $x + 4 < 7$ (1 point)</p> $\frac{-7 < x + 4 < 7}{-4} \frac{-7 < x + 4 < 7}{-4}$ $-11 < x < 3$ <p></p> | <p>9. $11 - 3x \geq 2$ (2 points)</p> $\frac{11 - 3x \geq 2}{-11} \frac{11 - 3x \leq -2}{-11}$ $\frac{-3x \geq -9}{-3} \frac{-3x \leq -13}{-3}$ $x \leq 3$ $x \geq 13/3$ $x \geq 4\frac{1}{3}$ <p></p> |
|---|---|

Solve and Graph.

11. $|x + 5| > 6$

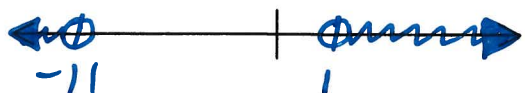
(1 point)

$$\begin{array}{r} x+5 > 6 \\ -5 \quad -5 \end{array}$$

$$\boxed{x > 1}$$

$$\begin{array}{r} x+5 < -6 \\ -5 \quad -5 \end{array}$$

$$\boxed{x < -11}$$



13. $|-3x| < 9$

(2 points)

$$\frac{-9}{-3} < \frac{-3x}{-3} < \frac{9}{-3}$$

$$3 > x > -3$$

$$\boxed{-3 < x < 3}$$



12. $\frac{3x}{4} < 12$

(1 point)

$$\frac{4}{3} \left(\frac{3x}{4} \right) < \frac{12}{1} \cdot \frac{4}{3}$$

$$\boxed{x < 16}$$



Reach for the stars...3 points each

14. Solve and Graph.

$$4 < 2|3x + 1| - 10$$

$$\begin{array}{r} +10 \qquad +10 \\ \hline 14 < 2|3x+1| \\ \hline 2 \qquad 2 \end{array}$$

$$7 < |3x+1|$$

$$|3x+1| > 7$$

$$\begin{array}{r} 3x+1 > 7 \\ -1 \quad -1 \\ \hline 3x > 6 \\ \hline 3 \quad 3 \end{array}$$

$$\boxed{x > 2}$$

$$\begin{array}{r} 3x+1 < -7 \\ -1 \quad -1 \\ \hline 3x < -8 \\ \hline 3 \quad 3 \end{array}$$

$$x < -\frac{8}{3}$$

$$\boxed{x < -2\frac{2}{3}}$$

