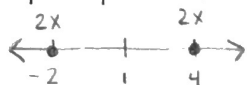


Absolute Value Equations & Inequalities

Name: KeyPeriod: Date:

Solve each of the following equations.

1. $|2x-1|=3$



$$2x = -2 \quad \text{or} \quad 2x = 4$$

$$\boxed{x = -1} \quad \text{or} \quad \boxed{x = 2}$$

$$2x - 1 = 3 \quad \text{or} \quad 1 - 2x = 3$$

$$2x = 4 \quad \text{or} \quad -2x = 2$$

$$\boxed{x = 2} \quad \text{or} \quad \boxed{x = -1}$$

3. $|2x+1|=x+5$

$$2x+1 = x+5 \quad \text{or} \quad -1-2x = x+5$$

$$\boxed{x = 4} \quad \text{or} \quad -6 = 3x$$

$$\checkmark \quad \boxed{-2 = x} \quad \checkmark$$



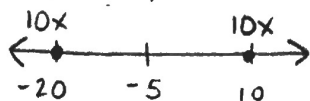
$$2x = -1 - x - 5 \quad \text{or} \quad 2x = -1 + x + 5$$

$$3x = -6 \quad \text{or} \quad \boxed{x = 4}$$

$$\boxed{x = -2} \quad \text{or} \quad \boxed{x = 4}$$

5. $|10x+5|-7=8$

$$|10x+5|=15$$



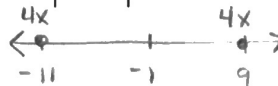
$$\boxed{x = -2} \quad \text{or} \quad \boxed{x = 1}$$

$$10x + 5 = 15 \quad \text{or} \quad -5 - 10x = 15$$

$$10x = 10 \quad \text{or} \quad -10x = 20$$

$$\boxed{x = 1} \quad \text{or} \quad \boxed{x = -2}$$

2. $|4x+1|=10$



$$4x = -11 \quad \text{or} \quad 4x = 9$$

$$\boxed{x = -11/4} \quad \text{or} \quad \boxed{x = 9/4}$$

$$4x + 1 = 10 \quad \text{or} \quad -1 - 4x = 10$$

$$4x = 9 \quad \text{or} \quad -4x = 11$$

$$\boxed{x = 9/4} \quad \text{or} \quad \boxed{x = -11/4}$$

4. $|3x-5|+7=4$

$$|3x-5| = -3$$

no solution

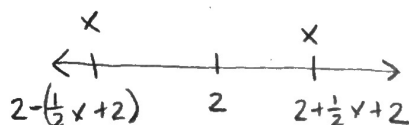
Preview from Notesale.co.uk
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Check!

6. $\frac{1}{2}x+1=|x-2|-1$

$$\frac{1}{2}x+2=|x-2|$$

Check!



$$x = -\frac{1}{2}x \quad \text{or} \quad x = 4 + \frac{1}{2}x$$

$$\frac{3}{2}x = 0$$

$$\boxed{x = 0} \quad \checkmark$$

$$\frac{1}{2}x = 4$$

$$\boxed{x = 8} \quad \checkmark$$

$$\frac{1}{2}x + 2 = x - 2$$

$$4 = \frac{1}{2}x$$

$$\boxed{8 = x}$$

$$2 - x = \frac{1}{2}x + 2$$

$$0 = \frac{3}{2}x$$

$$\boxed{x = 0}$$