

## Solving &amp; Graphing Absolute Value Equations &amp; Inequalities

Period \_\_\_\_\_

**CLASS EXAMPLES: Solve each equation.**

1)  $|k| = 6$

2)  $|x + 2| = 1$

3)  $2|r + 4| = -12$

4)  $5|9 - 5p| + 3 = 8$

**Solve each equation.**

5)  $|-4 + r| = 13$

6)  $\left|\frac{x}{9}\right| = 4$

7)  $8|n| = 8$

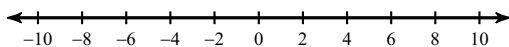
8)  $|p| + 1 = 7$

9)  $10 + |8v| = 66$

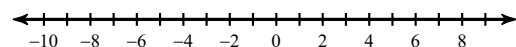
10)  $4|-5x - 8| - 9 = 39$

**CLASS EXAMPLES: Solve each inequality and graph its solution.**

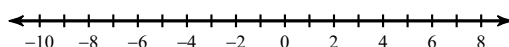
11)  $|p| \leq 8$



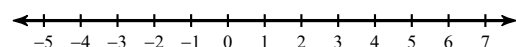
12)  $|x| > 5$



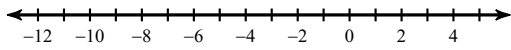
13)  $|1 + p| > 5$



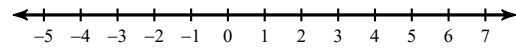
14)  $\frac{|k|}{9} \geq -4$



$$15) |x + 3| + 8 < 15$$

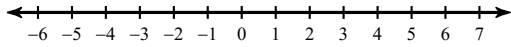


$$16) 10|1 - 9x| - 3 > 77$$

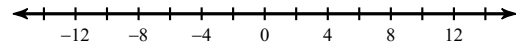


**Solve each inequality and graph its solution.**

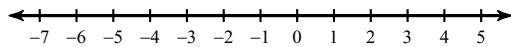
$$17) |x - 7| < -14$$



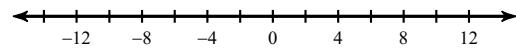
$$18) \left| \frac{x}{10} \right| \geq 1$$



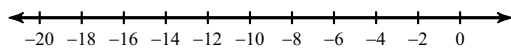
$$19) \frac{|k|}{4} \geq -5$$



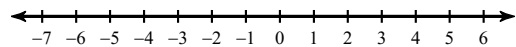
$$20) -1 + |v| \geq 8$$



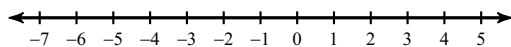
$$21) \frac{|10 + x|}{6} \geq 1$$



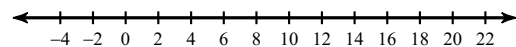
$$22) |a - 3| + 10 \leq 0$$



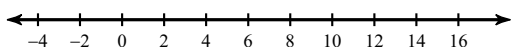
$$23) -4|1 + 5x| < -36$$



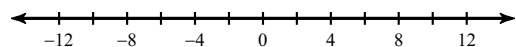
$$24) 5 + |n - 8| > 15$$



$$25) -6 + 8|-6 + x| < 66$$



$$26) 2 + 8\left|\frac{n}{5}\right| \leq 18$$



# Answers to Solving & Graphing Absolute Value Equations & Inequalities (ID: 1)

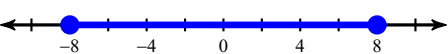
1)  $\{6, -6\}$

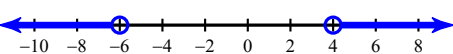
3) No solution.

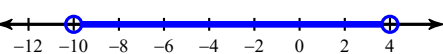
5)  $\{17, -9\}$

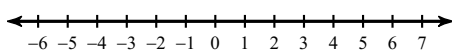
7)  $\{1, -1\}$

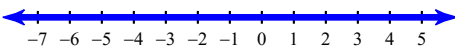
9)  $\{7, -7\}$

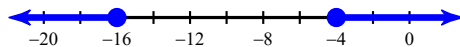
11)  $-8 \leq p \leq 8$  : 

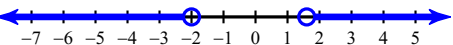
13)  $p > 4$  or  $p < -6$  : 

15)  $-10 < x < 4$  : 

17) No solution. : 

19)  $\{ \text{All real numbers.} \}$  : 

21)  $x \geq -4$  or  $x \leq -16$  : 

23)  $x > \frac{8}{5}$  or  $x < -2$  : 

25)  $-3 < x < 15$  : 