

## Unit 1.10 Solving Absolute value Equations and Inequalities Examples Period \_\_\_\_\_

**Solve each equation.**

1)  $|n| = 3$

2)  $|x| = -3$

3)  $\frac{|m|}{2} = 2$

4)  $-1 + |n| = -4$

5)  $4 + |r| = 7$

6)  $4 - 3|n| = -2$

7)  $|b - 1| = 2$

8)  $|3 + p| = -3$

9)  $\left|\frac{x}{2}\right| - 3 = -6$

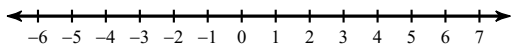
10)  $\frac{|p + 4|}{4} = 1$

11)  $3 + 4|x + 2| = -13$

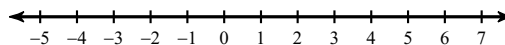
12)  $\left|\frac{k}{3}\right| + 3 = 4$

Solve each inequality. Graph its solution. Write the interval notation.

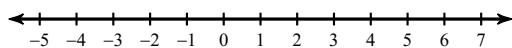
13)  $|r| < 4$



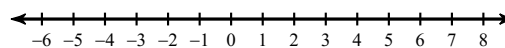
14)  $\frac{|m|}{4} \leq 1$



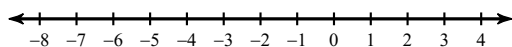
15)  $|v| + 4 \geq 5$



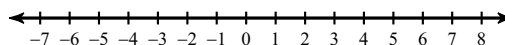
16)  $|m| - 1 \geq 2$



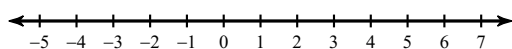
17)  $2 - 2|x| \leq 10$



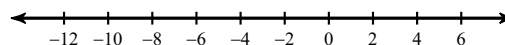
18)  $\left|\frac{n}{3}\right| \leq -2$



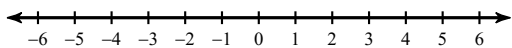
19)  $2 - 3\left|\frac{b}{2}\right| < -1$



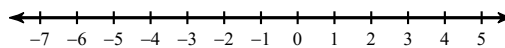
20)  $1 + |x + 3| \geq 8$



21)  $|3n + 4| < -5$



22)  $|3v + 2| + 2 \leq 16$



## Unit 1.10 Solving Absolute value Equations and Inequalities Examples Period \_\_\_\_

**Solve each equation.**

1)  $|n| = 3$

 $\{3, -3\}$ 

2)  $|x| = -3$

**No solution.**

3)  $\frac{|m|}{2} = 2$

 $\{4, -4\}$ 

4)  $-1 + |n| = -4$

**No solution.**

5)  $4 + |r| = 7$

 $\{3, -3\}$ 

6)  $4 - 3|n| = -2$

 $\{2, -2\}$ 

7)  $|b - 1| = 2$

 $\{3, -1\}$ 

8)  $|3 + p| = -3$

**No solution.**

9)  $\left|\frac{x}{2}\right| - 3 = -6$

**No solution.**

10)  $\frac{|p + 4|}{4} = 1$

 $\{0, -8\}$ 

11)  $3 + 4|x + 2| = -13$

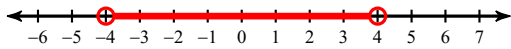
**No solution.**

12)  $\left|\frac{k}{3}\right| + 3 = 4$

 $\{3, -3\}$

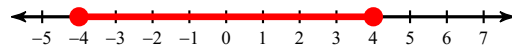
Solve each inequality. Graph its solution. Write the interval notation.

13)  $|r| < 4$



$-4 < r < 4$

14)  $\frac{|m|}{4} \leq 1$



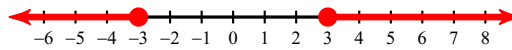
$-4 \leq m \leq 4$

15)  $|v| + 4 \geq 5$



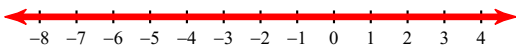
$v \geq 1$  or  $v \leq -1$

16)  $|m| - 1 \geq 2$



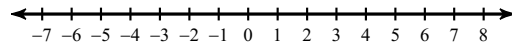
$m \geq 3$  or  $m \leq -3$

17)  $2 - 2|x| \leq 10$



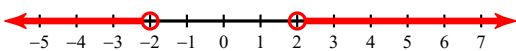
{ All real numbers. }

18)  $\left|\frac{n}{3}\right| \leq -2$



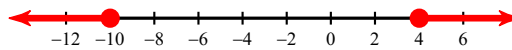
No solution.

19)  $2 - 3\left|\frac{b}{2}\right| < -1$



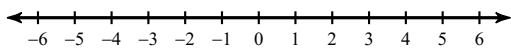
$b > 2$  or  $b < -2$

20)  $1 + |x + 3| \geq 8$



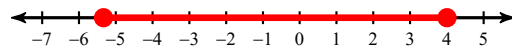
$x \geq 4$  or  $x \leq -10$

21)  $|3n + 4| < -5$



No solution.

22)  $|3v + 2| + 2 \leq 16$



$-\frac{16}{3} \leq v \leq 4$