

INEQUALITIES

$>$ Greater Than \circ


$<$ Less than \circ

\geq ... or equal to \bullet

\leq ... or equal to \bullet


$x > 3$ 

$x - 5 < 4$
 $\quad +5 \quad +5$
 $x < 9$



$-5 - 3x \geq -10$
 $\quad -5 \quad -5$

$-3x \geq -15$
 $\quad -3 \quad -3$
 $x \geq 5$



* When you divide by a Negative, DENOMINATOR IS NEG,
 You FLIP your sign *

Solving Two-Step Inequalities

$> G$
 $< L$

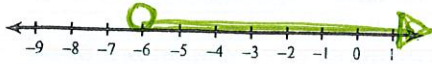
\geq
 \leq } or equal to

Name _____

Date _____ Period _____

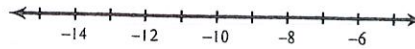
Solve each inequality and graph its solution.

1) $\frac{n}{3} + 2 > 0$

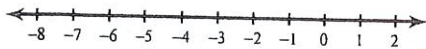


$\times \cdot \frac{n}{3} > -2 \cdot 3$
 $\frac{n}{3} + 2 > 0$
 $\frac{n}{3} - 2 > -2$
 $n > -6$

2) $\frac{p}{9} - 1 \leq -2$



3) $\frac{x}{1} + 5 > 5$



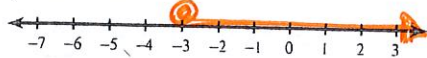
4) $\frac{1+m}{9} \geq 1 \cdot 9$



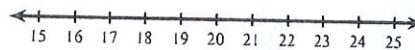
$1+m \geq 9$
 $-1 \quad -1$
 $m \geq 8$

$8-2$
 $-2(-4) - 2 \leq 4$ ~~$0 \leq 4$~~

5) $-2r - 2 \leq 4$

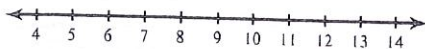


6) $8x + 2 \leq 138$

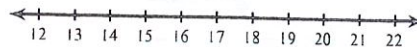


$-2r \leq 6$
 $\frac{-2r}{-2} \leq \frac{6}{-2}$ ← When your denominator is negative, flip your sign.
 $r \geq -3$

7) $3 + \frac{b}{9} < 4$



8) $9 + \frac{n}{2} > 16$



INEQUALITY ODDS

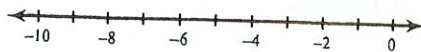
9) $-7v + 5 \geq -79$



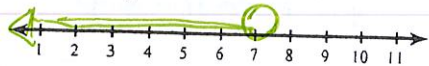
$$-7v \geq -84$$

$$v \leq 12$$

10) $\frac{n+3}{2} > -2$



11) $4 > \frac{a+1}{2}$

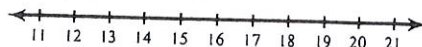


$$8 > a + 1$$

$$7 > a$$

$$a < 7$$

12) $-2 + \frac{x}{2} > 6$



13) $60 > 5 - 5n$

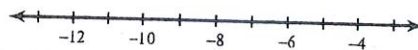


$$55 > -5n$$

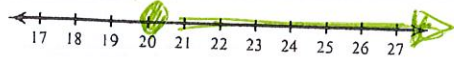
$$-11 < n$$

$$n > -11$$

14) $\frac{x+1}{2} \geq -4$



15) $6 \leq 5 + \frac{p}{20}$



$$1 \leq \frac{p}{20}$$

$$20 \leq p$$

$$p \geq 20$$

16) $-18 + \frac{k}{3} \leq -26$

