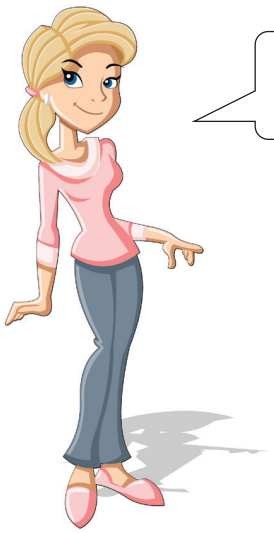
NAME: _____ PERIOD: _____ DATE: _____

Homework Problem Set

1. Shamara is thinking of a number.



$10 - x > 2$

$10 - 8 > 2$

$2 > 2$

No

A. Could Shamara be thinking of 8? Explain.

No

B. How is Sharmara's statement written using algebra?

$10 - x > 2$

$\boxed{x} < 8$

C. Graph the solution ~~to possibilities~~ for Sharmara's number and give the solution in interval notation.

$x < \boxed{8}$

$(-\infty, 8)$

2. Benjamin is also thinking of a number.

If I multiply my number by four, then my answer is greater than ten.

A. Write Benjamin's statement using algebra.

$4x > 10$

B. Graph the solution to possibilities for Benjamin's number and give the solution in interval notation.

$x > \frac{10}{4} = \frac{5}{2}$

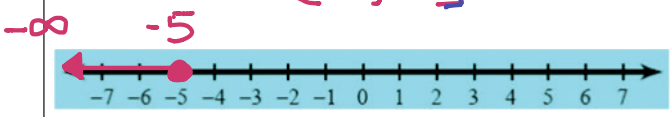
$x > \frac{5}{2}$

$x > 2.5$

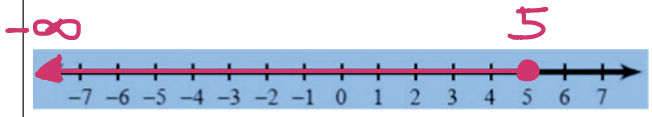
$(2.5, \infty)$

Draw a graph for each inequality and give the solution in interval notation.

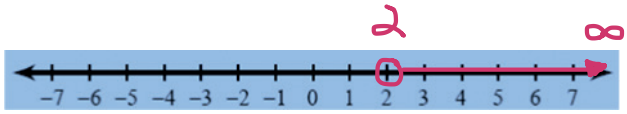
3. $n \leq -5$ $(-\infty, -5]$



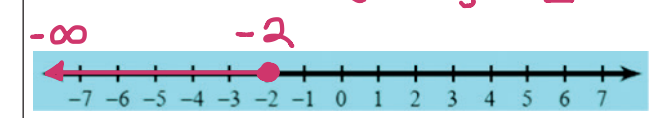
4. $n \leq 5$ $(-\infty, 5]$



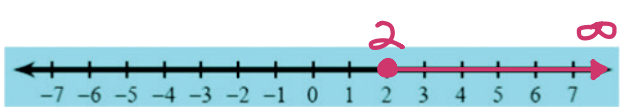
5. $r > 2$ $(2, \infty)$



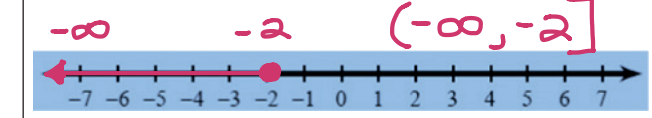
6. $r \leq -2$ $(-\infty, -2]$



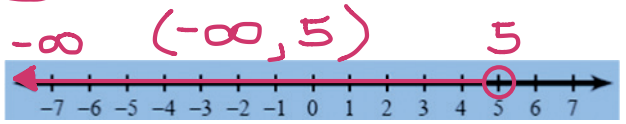
7. $x \geq 2$ $[2, \infty)$



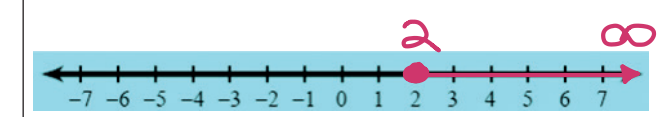
8. $-2 \geq v$ $v \leq -2$ $(-\infty, -2]$



9. $5 > b$ $b < 5$ $(-\infty, 5)$

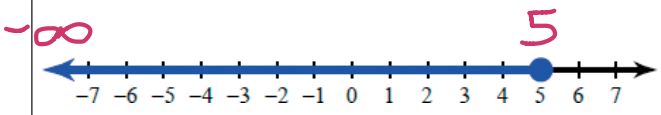


10. $a \geq 2$ $[2, \infty)$

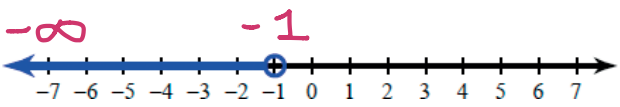


Write an inequality for each graph and give the solution in interval notation.

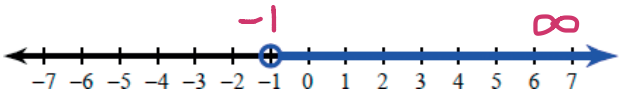
11. $x \leq 5$ $(-\infty, 5]$



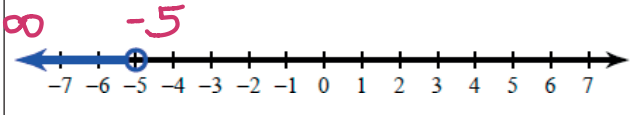
12. $x < -1$ $(-\infty, -1)$



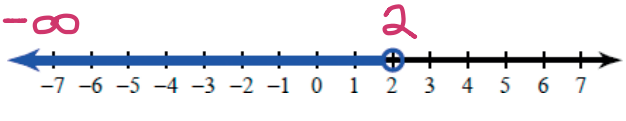
13. $x > -1$ $(-1, \infty)$



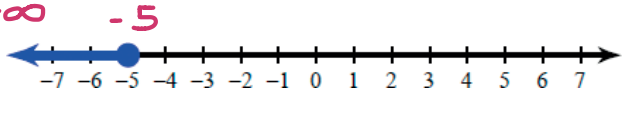
14. $x < -5$ $(-\infty, -5)$



15. $x < 2$ $(-\infty, 2)$



16. $x \leq -5$ $(-\infty, -5]$



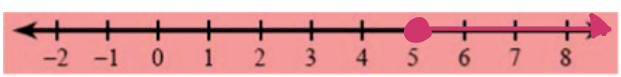
Use *mental math* to solve and graph each inequality. Then give the solution in interval notation.

17. $-12 > x - 7$ $(-\infty, -5)$

$x - 7 < -12$
$+7 \quad +7$
$x < -5$

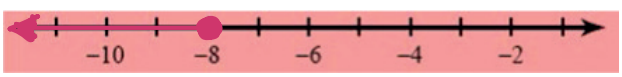
18. $-1 + r \geq 4$ $[5, \infty)$

$+1 \quad +1$
$r \geq 5$



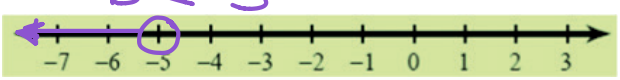
19. $n - 6 \leq -14$ $(-\infty, -8]$

$+6 \quad +6$
$n \leq -8$



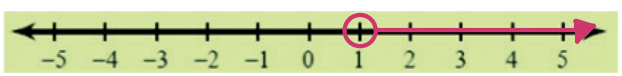
20. $b - 7 < -12$ $(-\infty, -5)$

$+7 \quad +7$
$b < -5$



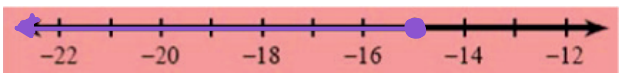
21. $a - 17 > -16$ $(1, \infty)$

$+17 \quad +17$
$a > 1$



22. $15 + x \leq 0$ $(-\infty, -15]$

$-15 \quad -15$
$x \leq -15$

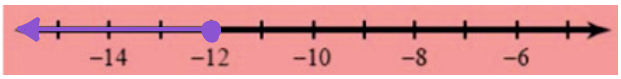


23. $3 + v \leq -9$

$-3 \quad -3$

$v \leq -12$

$(-\infty, -12]$



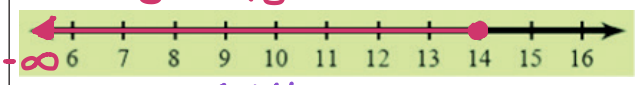
24. $8 \geq n - 6$

$n - 6 \leq 8$

$+6 \quad +6$

$n \leq 14$

$(-\infty, 14]$



25. $\frac{n}{3} > 3 \cdot 3$

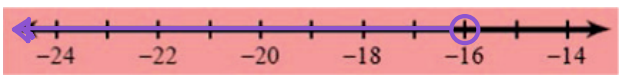
$n > 9$

$(9, \infty)$

26. $\frac{k}{4} \cdot 4 < -4 \cdot 4$

$k < -16$

$(-\infty, -16)$

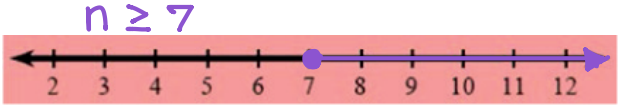


27. $12n \geq 84$

$\frac{12}{12} \quad \frac{12}{12}$

$n \geq 7$

$[7, \infty)$



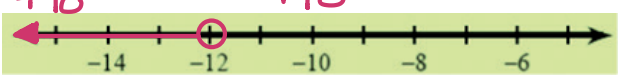
28. $-22 > -10 + b$

$-10 + b < -22$

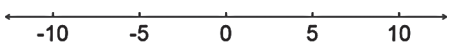
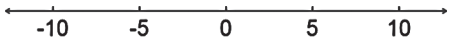
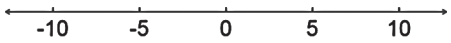
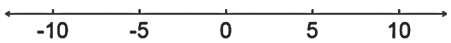
$+10 \quad +10$

$b < -12$

$(-\infty, -12)$



Complete the table below for Problems 29–33. Think about the work you did when solving equations to write the simplified inequality statement.

	Inequality Statement	Simplified Inequality Statement	Interval Notation of Solution	Graph of Solution
29.	$10 - x > 10$			
30.	$x - 10 > x$			
31.	$2x > 10$			
32.	$\frac{x}{5} < 2$			
33.	$\frac{x}{2} > 5$