

Unit 2 Practice Exam ^{#2} (Chapter 4)

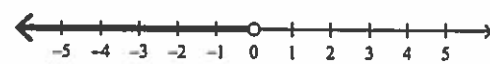

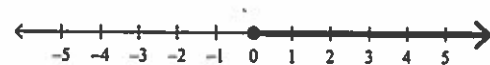
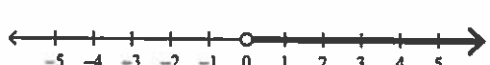
Multiple Choice

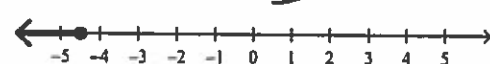
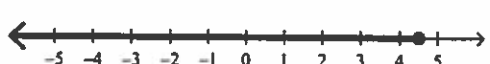
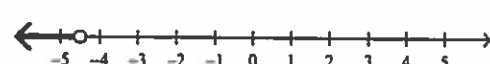

Identify the choice that best completes the statement or answers the question.

- Which number is a solution of the inequality? $2x \geq 16$
 $x \geq 8$
- B. 1. $2x - 10 \geq 6$
 a. $\frac{3}{5}$ b. 8 c. -1 d. 3

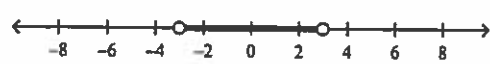



- A. 2. $10 \geq \frac{10a}{1}$ $1 \geq a$
 a. 1 b. 13 c. 3 d. 11

Identify the graph of the inequality from the given description.

- A. 3. x is negative.
 a.  c. 
 b.  d. 

- A. 4. x is at most -4.5. $x \leq -4.5$
 a.  c. 
 b.  d. 

Write a compound inequality that represents each situation. Graph your solution.

- A. 5. all real numbers that are greater than -3 and less than 3 $-3 < x < 3$
 a. $-3 < x < 3$ c. $-3 < x \leq 3$
 
 b. $-3 < x < 3$ d. $-3 \leq x \leq 3$
 

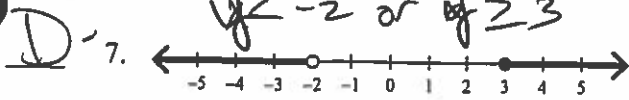
Write an inequality for the situation.

- C. 6. all real numbers g that are less than -4 or greater than 9 $g < -4$ or $g > 9$
 a. $-4 < g < 9$ c. $g < -4$ or $g > 9$
 b. $g < -4$ or $g > 9$ d. $g < 9$ or $g > -4$

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Write a compound inequality that the graph could represent.

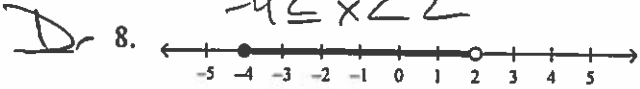


a. $-3 \leq y < 2$

b. $y > -2$ or $y \leq 3$

c. $y < -3$ or $y \geq 2$

d. $y < -2$ or $y \geq 3$



a. $-2 \leq x < 4$

b. $-4 < x \leq 2$

c. $x \geq -4$ or $x < 2$

d. $-4 \leq x < 2$

Short Answer

Write the inequality in words.

9. $3n - 6 > 36$

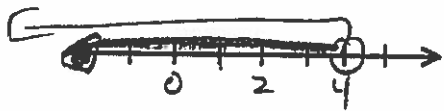
Three times n minus 6 is greater than 36

Graph the inequality.

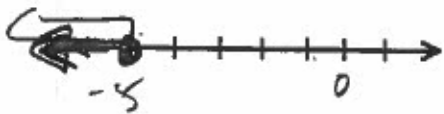
10. $x \geq -3$



11. $d < 4$



12. $x \leq -5$



Solve the inequality.

13. $b - 6 > -1$

$$\begin{array}{r} b - 6 > -1 \\ +6 \quad +6 \\ \hline b > 5 \end{array}$$

14. $\frac{5}{8} \geq x - \frac{1}{6}$

$$\begin{array}{r} \frac{5}{8} \geq x - \frac{1}{6} \\ +\frac{1}{6} \quad +\frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{8} \cdot \frac{3}{3} = \frac{15}{24} \\ + \frac{1}{6} \cdot \frac{4}{4} = \frac{4}{24} \\ \hline \frac{19}{24} \end{array}$$

$$\begin{array}{r} \frac{19}{24} \geq x \\ x \leq \frac{19}{24} \end{array}$$

15. $6(a - 11) > 30$

$$\begin{array}{r} 6a - 66 > 30 \\ +66 \quad +66 \\ \hline 6a > 96 \\ \frac{6a}{6} > \frac{96}{6} \end{array}$$

$$a > 16$$

16. $b + 12 - 2(b - 22) > 0$

$$b + 12 - 2b + 44 > 0$$

$$\begin{array}{r} -1b + 56 > 0 \\ -56 \quad -56 \\ \hline -1b > -56 \\ \frac{-1b}{-1} > \frac{-56}{-1} \end{array}$$

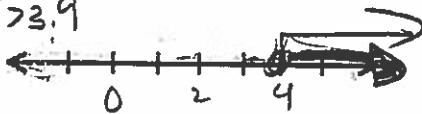
$$b < 56$$

Solve the inequality. then graph your solution.

17. $x - 7 > -3.1$

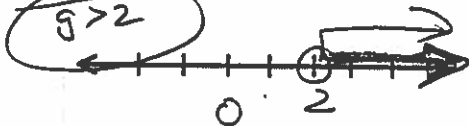
$$\begin{array}{r} x - 7 > -3.1 \\ +7 \quad +7 \\ \hline x > 3.9 \end{array}$$

$$\begin{array}{r} 6 \cancel{+} 0 \\ -3.1 \\ \hline 3.9 \end{array}$$



18. $g + 4 > 6$

$$\begin{array}{r} g + 4 > 6 \\ -4 \quad -4 \\ \hline g > 2 \end{array}$$

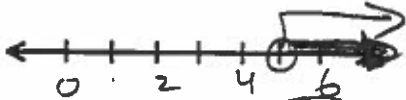


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19. ~~$2s < -10$~~
 ~~$\frac{2s}{2} < \frac{-10}{2}$~~

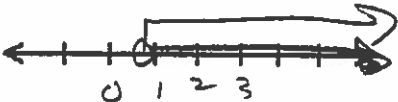
$s > 5$



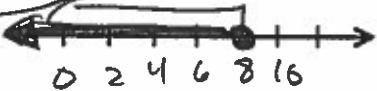
20. $q - \frac{1}{2} > \frac{1}{3}$
 $+ \frac{1}{2} \quad + \frac{1}{2}$

$q > \frac{5}{6}$

$$\begin{array}{r} \frac{1}{3} \cdot \frac{2}{2} \\ + \frac{1}{2} \cdot \frac{3}{3} \\ \hline \frac{2}{6} + \frac{3}{6} \\ \hline \frac{5}{6} \end{array}$$



21. $n - 4 \leq 4$
 $+4 \quad +4$
 $n \leq 8$



22. Solve for the variable. $\frac{-x}{3} \leq -2$

~~$\frac{-x}{3} \leq -2$~~ ~~(-3)~~ $x \leq -2(-3)$
 $x \geq 6$

23. Solve for the variable. $\frac{6x}{6} \geq 12$

$x \geq 2$

24. Solve for the variable. $x \cdot \frac{3}{3} \leq -6$
 $+3 \quad +3$

~~$x \leq -3$~~

25. Solve for the variable. $\frac{x}{6} \geq -2(6)$

$x \geq -12$

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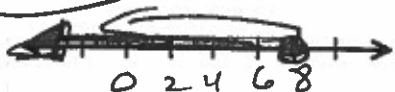
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26. Solve for the variable. $x - 1 \leq -8$

$$\begin{array}{r} \cancel{4x} - 1 \leq -8 \\ \phantom{\cancel{4x}} + 1 \\ \hline x \leq -7 \end{array}$$

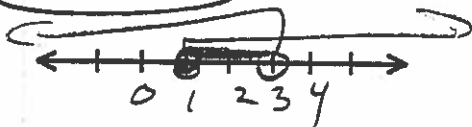
27. $m - 2 \leq 6$

$$\begin{array}{r} \cancel{m} - 2 \leq 6 \\ \phantom{\cancel{m}} + 2 \\ \hline m \leq 8 \end{array}$$



28. $-2 \leq 2x - 4 < 2$

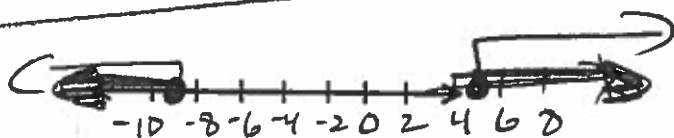
$$\begin{array}{r} -2 \leq 2x - 4 < 2 \\ +4 \quad | \quad +4 \quad | \quad +4 \\ \hline 2 \leq 2x < 6 \\ \frac{2}{2} \leq \frac{2x}{2} < \frac{6}{2} \\ 1 \leq x < 3 \end{array}$$



29. $|d + 2| \geq 7$ Greater OR

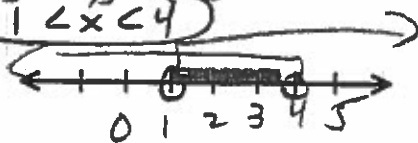
$$\begin{array}{r} d + 2 \geq 7 \\ - 2 \\ \hline d \geq 5 \end{array} \quad \text{OR} \quad \begin{array}{r} d + 2 \leq -7 \\ - 2 \\ \hline d \leq -9 \end{array}$$

$$d \geq 5 \quad \text{OR} \quad d \leq -9$$



30. $-2 < 5x - 7 < 13$

$$\begin{array}{r} -2 < 5x - 7 < 13 \\ +7 \quad | \quad +7 \quad | \quad +7 \\ \hline 5 < 5x < 20 \\ \frac{5}{5} < \frac{5x}{5} < \frac{20}{5} \\ 1 < x < 4 \end{array}$$



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Less than AND

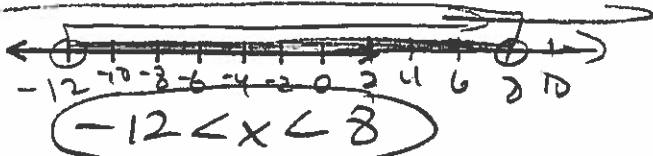
31. $|2x + 4| < 20$

$$\begin{array}{r} 2x + 4 < 20 \\ -4 \quad -4 \\ \hline 2x < 16 \\ x < 8 \end{array}$$

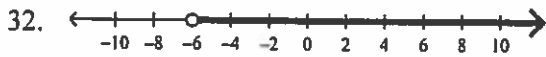
$$\begin{array}{r} 2x + 4 > -20 \\ -4 \quad -4 \\ \hline 2x > -24 \\ x > -12 \end{array}$$

$x < 8$ and

$x > -12$



Write an inequality for the graph.



$x > -6$

33. Solve for the variable and graph your solution. $\frac{x}{5} > 8$ (5)

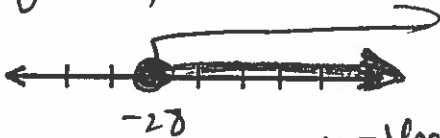


$x > 40$

34. $\frac{1}{4}g \leq \frac{16(-7)}{4}$

$$g \geq \frac{-112}{4} = -28$$

$g \geq -28$



greater than or equal to

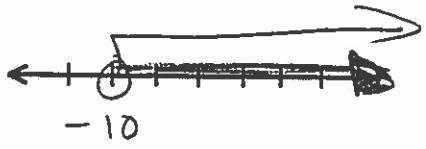
35. Tina can type at least 65 words per minute. Write an inequality to model this situation.

$T \geq 65$

36. Solve for the variable and graph your solution. $3(2x - 3) < 5(x + 2) + 3x + 1$

$$6x - 9 < 5x + 10 + 3x + 1$$

$$\begin{array}{r} 6x - 9 < 8x + 11 \\ -6x \quad -6x \\ \hline -9 < 2x + 11 \\ -11 \quad -11 \\ \hline -20 < 2x \\ \frac{-20}{2} < \frac{2x}{2} \quad -10 < x \end{array}$$



$x > -10$

Solve the equation. If there is no solution, write no solution.

I solve
Separate
Solve

37. $|x| - 3 = 12$

$$\begin{array}{r} |x| - 3 = 12 \\ +3 \quad +3 \\ \hline |x| = 15 \end{array}$$

$x = 15$ $x = -15$

38. $2|n| - 14 = 38$

$$\begin{array}{r} 2|n| - 14 = 38 \\ +14 \quad +14 \\ \hline 2|n| = 52 \\ \frac{2}{2} \quad \frac{2}{2} \\ \hline |n| = 26 \end{array}$$

$n = 26$ $n = -26$

39. Solve for the variable. $9 + 13w \geq 10(w + 9)$

$$9 + 13w \geq 10w + 90$$

$$\begin{array}{r} 9 + 13w \geq 10w + 90 \\ -10w \quad -10w \\ \hline 9 + 3w \geq 90 \\ -9 \quad -9 \\ \hline 3w \geq 81 \\ \frac{3w}{3} \geq \frac{81}{3} \end{array}$$

$w \geq 27$

Solve the compound inequality. Graph your solution.

40. $12x - 5 < -17$ or $2x + 9 > 9$

$$\begin{array}{r} 12x - 5 < -17 \\ +5 \quad +5 \\ \hline 12x < -12 \\ \frac{12x}{12} < \frac{-12}{12} \\ \hline x < -1 \end{array} \quad \text{OR} \quad \begin{array}{r} 2x + 9 > 9 \\ -9 \quad -9 \\ \hline 2x > 0 \\ \frac{2x}{2} > \frac{0}{2} \\ \hline x > 0 \end{array}$$

