

Unit 2 Practice Exam (Chapter 4)

Multiple Choice

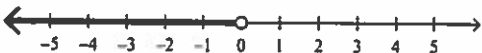


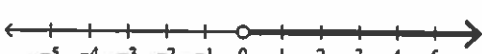
Identify the choice that best completes the statement or answers the question.

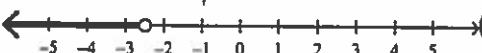

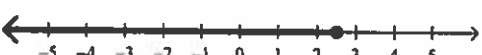

Which number is a solution of the inequality?

- B. 1. $8x - 7 \geq 13$ $8x \geq 20 \Rightarrow x \geq \frac{5}{2}$
- a. $\frac{4}{7}$ b. $\frac{5}{2}$ c. 2 d. $-\frac{4}{3}$

- B. 2. $4 \geq 4c$ $\frac{4}{4} \geq c \Rightarrow 1 \geq c$
- a. 12 b. 1 c. 10 d. 4

Identify the graph of the inequality from the given description.

- D. 3. x is positive.
- a.  c. 
- b.  d. 

- C. 4. x is at least -2.5. $x \geq -2.5$
- a.  c. 
- b.  d. 

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

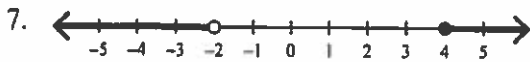
- C. 5. all real numbers that are greater than -2 and less than 2. $-2 < x < 2$
- a. $-2 < x \leq 2$ c. $-2 < x < 2$
- b. $-2 \leq x \leq 2$ d. $-2 < x < 2$

Write an inequality for the situation. $d < 2$ or $d > 8$

- A. 6. all real numbers d that are less than 2 or greater than 8
- a. $d < 2$ or $d > 8$ c. $d < 8$ or $d > 2$
- b. $2 < d < 8$ d. $d < 2$ or $d > 8$

Write a compound inequality that the graph could represent.

C



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

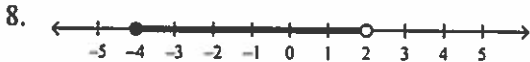
a. $-4 \leq m < 2$

b. $m < -4$ or $m \geq 2$

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

d. $m > -2$ or $m \leq 4$

D



$-4 \leq x < 2$

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.

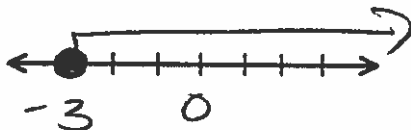
9. $2n - 8 > 34$

2 times n minus 8 is greater than 34

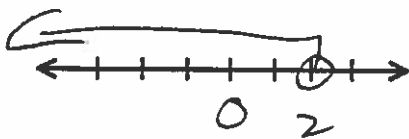
8 less than ^{or} 2 times a number is greater than 34

Graph the inequality.

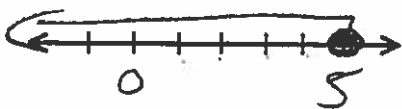
10. $x \geq -3$



11. $p < 2$



12. $x \leq 5$



Solve the inequality.

13. $p - 7 > -1$

$$\begin{array}{r} +7 \quad +7 \\ \hline p > 6 \end{array}$$

14. $\frac{7}{10} \geq y - \frac{3}{10}$

$$\begin{array}{r} +\frac{3}{10} \quad +\frac{3}{10} \\ \hline \frac{7}{10} \geq y \end{array}$$

$$\frac{10}{10} \geq y \text{ or } 1 \geq y$$

15. $7(p - 12) > 35$

$$\begin{array}{r} 7p - 84 > 35 \\ +84 \quad +84 \\ \hline 7p > 119 \end{array}$$

$$\frac{7p}{7} > \frac{119}{7} \quad p > 17$$

16. $m + 14 - 2(m - 16) > 0$

$$m + 14 - 2m + 32 > 0$$

$$-m + 46 > 0$$

$$\begin{array}{r} -m > -46 \\ -1 \quad -1 \\ \hline m < 46 \end{array}$$

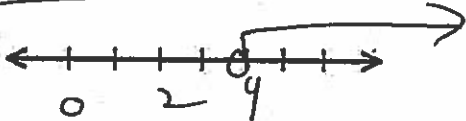
$$m < 46$$

Solve the inequality then graph your solution.

17. $x - 7 > -3.1$

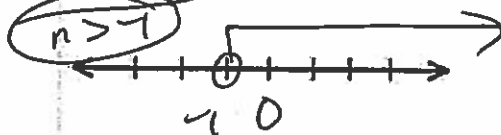
$$\begin{array}{r} +7 \quad +7 \\ \hline x > 3.9 \end{array}$$

$$x > 3.9$$

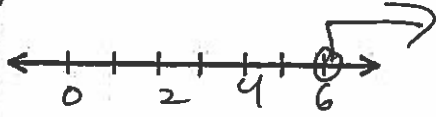


18. $n - 2 > -3$

$$\begin{array}{r} +2 \quad +2 \\ \hline n > -1 \end{array}$$

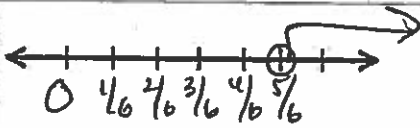


19. $\frac{-2b}{2} < \frac{-12}{2}$ $b > 6$

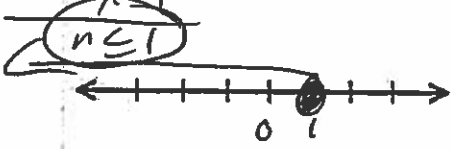


20. $q - \frac{1}{2} > \frac{1}{3}$
 $+ \frac{1}{2} + \frac{1}{2}$ $q > \frac{5}{6}$

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



21. $n + 1 \leq 2$
 -1
 $n \leq 1$



22. Solve for the variable. $-\frac{x}{2} \leq -1$
 $(-2) \cdot \frac{x}{2} \leq -1(-2)$ $x \geq 2$

23. Solve for the variable. $\frac{3x}{3} \geq \frac{-3}{3}$
 $x \geq -1$

24. Solve for the variable. $x - 6 \leq -9$
 $+6 +6$
 $x \leq -3$

25. Solve for the variable. $\frac{x}{3} \geq -4$ (3)
 $x \geq -12$

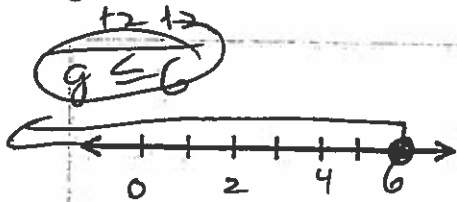
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26. Solve for the variable. $x - 3 \leq -7$

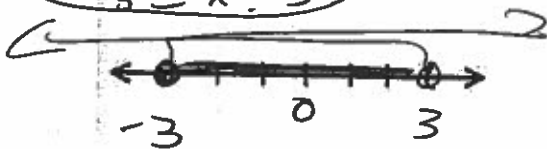
$$\begin{array}{r} x - 3 \leq -7 \\ +3 \quad +3 \\ \hline x \leq -4 \end{array}$$

27. $g - 2 \leq 4$



28. $-10 \leq 2x - 4 < 2$

$$\begin{array}{r} -10 \leq 2x - 4 < 2 \\ +4 \quad +4 \quad +4 \\ \hline -6 \leq 2x < 6 \\ \frac{-6}{2} \leq \frac{2x}{2} < \frac{6}{2} \\ -3 \leq x < 3 \end{array}$$

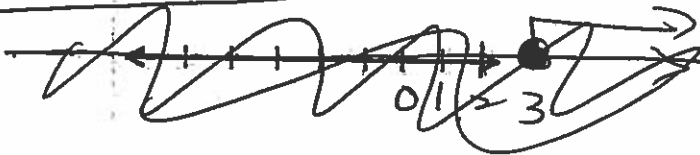
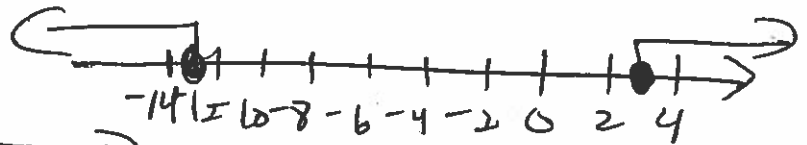


29. $|d + 5| \geq 8$

Greater

$$\begin{array}{r} d + 5 \geq 8 \\ -5 \quad -5 \\ \hline d \geq 3 \end{array} \quad \text{OR} \quad \begin{array}{r} d + 5 \leq -8 \\ -5 \quad -5 \\ \hline d \leq -13 \end{array}$$

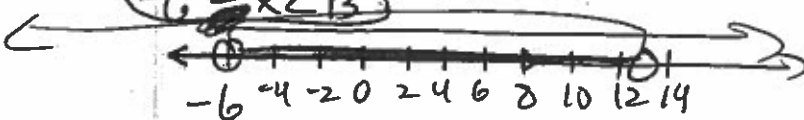
$$d \geq 3 \quad \text{OR} \quad d \leq -13$$



30. $-18 < 2x - 6 < 20$

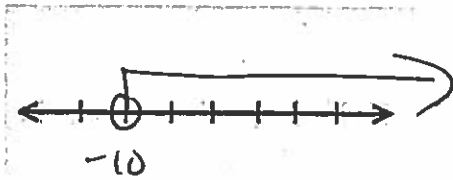
$$\begin{array}{r} -18 < 2x - 6 < 20 \\ +6 \quad +6 \quad +6 \\ \hline -12 < 2x < 26 \\ \frac{-12}{2} < \frac{2x}{2} < \frac{26}{2} \\ -6 < x < 13 \end{array}$$

$$-6 < x < 13$$



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

$$\begin{aligned} 6x - 9 &< 5x + 10 + 3x + 1 \\ 6x - 9 &< 8x + 11 \\ -6x &\quad -6x \\ \hline -9 &< 2x + 11 \\ -11 &\quad -11 \\ \hline -20 &< 2x \\ \frac{-20}{2} &< \frac{2x}{2} \end{aligned}$$



$$\begin{aligned} -10 &< x \\ x &> -10 \end{aligned}$$

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

37. $|x| - 5 = 10$

$$\begin{aligned} |x| - 5 &= 10 \\ +5 &\quad +5 \\ \hline |x| &= 15 \\ \swarrow &\quad \searrow \\ x = 15 &\quad x = -15 \end{aligned}$$

38. $7|n| - 1 = 34$

$$\begin{aligned} 7|n| - 1 &= 34 \\ +1 &\quad +1 \\ \hline 7|n| &= 35 \\ \frac{7|n|}{7} &= \frac{35}{7} \\ |n| &= 5 \end{aligned}$$

$$\begin{aligned} |n| &= 5 \\ \swarrow &\quad \searrow \\ n = 5 &\quad n = -5 \end{aligned}$$

39. Solve for the variable. $8 + 14y \geq 10(y + 8)$

$$\begin{aligned} 8 + 14y &\geq 10(y + 8) \\ 8 + 14y &\geq 10y + 80 \\ -10y &\quad -10y \\ \hline 8 + 4y &\geq 80 \\ -8 &\quad -8 \\ \hline 4y &\geq 72 \\ \frac{4y}{4} &\geq \frac{72}{4} \\ y &\geq 18 \end{aligned}$$

Solve the compound inequality. Graph your solution.

40. $12x - 11 < -11$ or $2x + 1 > 11$

$$\begin{aligned} 12x - 11 &< -11 & \text{or} & \quad & 2x + 1 &> 11 \\ +11 &\quad +11 & & & -1 &\quad -1 \\ \hline 12x &< 0 & & & 2x &> 10 \\ \frac{12x}{12} &\quad \frac{0}{12} & & & \frac{2x}{2} &\quad \frac{10}{2} \\ x &< 0 & & & x &> 5 \end{aligned}$$

$x < 0$ or $x > 5$