

Write the sentence as an inequality.

1. The product of a number n and 2 is no less than 14.

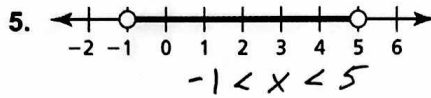
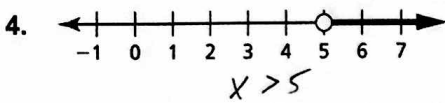
$$2n \geq 14$$

2. The speed s on a highway is at most 60 miles per hour.

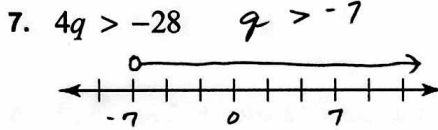
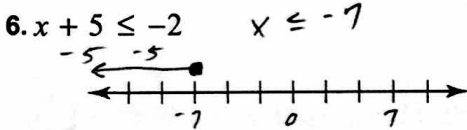
$$s \leq 60$$

3. The length r of a rope should be at least 28 inches. $r \geq 28$

Write an inequality that represents the graph.



Solve the inequality. Graph the solution.



Solve the inequality.

8. $2k > 2k + 4$
 $-2k \quad -2k$
 $0 > 4$ No Solution

9. $4p < 6p + 12$
 $-6p \quad -6p$
 $-\frac{2p}{-2} < \frac{12}{-2}$ $p > -6$

10. $2.5w - 5 < 2w + 5$
 $-2w \quad +5 \quad -2w \quad +5$
 $\frac{0.5w}{0.5} < \frac{10}{0.5}$ $w < 20$

11. $5(p - 1) > 6p - 7$
 $5p - 5 > 6p - 7$
 $-5p + 7 \quad -5p + 7$
 $2 > p$

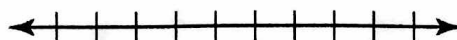
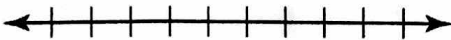
12. $5n + 3 \geq 4 - (6 - 5n)$
 $5n + 3 \geq 4 - 6 + 5n$
 $5n + 3 \geq -2 + 5n$
 $-5n \quad -5n$
 $3 \geq -2$ \mathcal{R}

13. $5 - 2x < 4 - 2x + 3$
 $+2x \quad +2x$
 $5 < 7$

Solve the inequality. Graph the solution.

14. $5 + 2y < 8$ or $5y > 3y + 7$
 $-5 \quad -5 \quad -3y \quad -3y$
 $\frac{2y}{2} < \frac{3}{2}$ $\frac{2y}{2} > \frac{7}{2}$
 $y < \frac{3}{2}$ $y > \frac{7}{2}$

15. $7 < 12 + c < 13$
 $-12 \quad -12$
 $-5 < c < 1$



Solve the inequality.

16. $-3p + 1 \leq -11$ or $-0.5p > 12$
 $-3p + 1 \leq -11$ $-0.5p > 12$
 $-1 \quad -1$ $-\frac{0.5p}{-0.5} > \frac{12}{-0.5}$
 $-3p \leq -12$ or $p < -24$
 $-3 \quad -3$
 $p \geq 4$

17. $6 < 4 - w \leq 2w - 2$
 $-4 \quad -4$ -4
 $2 < -w \leq 2w - 6$ $-\frac{2}{3} > w \geq 2$
 $-2w \quad -2w$
 $\frac{2}{3} < -\frac{3w}{-3} \leq -2$
No Solution

Answers

1. $2n \geq 14$

2. $s \leq 60$

3. $r \geq 28$

4. $x > 5$

5. $-1 < x < 5$

6. $x \leq -7$

See left.

7. $q > -7$

See left.

8. No Solution

9. $p > -6$

10. $w < 20$

11. $p < 2$

12. Infinitely Many Solutions \mathcal{R}

" "

14. $y < \frac{3}{2}$ or $y > \frac{7}{2}$

See left.

15. $-5 < c < 1$

See left.

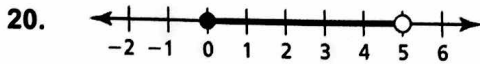
16. $p \geq 4$ or $p < -24$

17. No Solution

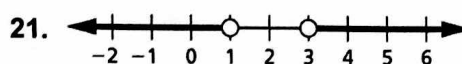
18. _____

19. _____

Write a compound inequality that represents the graph shown.



$$0 \leq x < 5$$



$$x < 1 \text{ or } x > 3$$

Answers

20. $0 \leq x < 5$

22. You need to earn at least \$75. You earn \$6.00 for each hour you work. Write and solve an inequality that represents the number of hours h that you need to work.

$$\frac{6h}{6} \leq \frac{75}{6}$$

$$h \leq 12.5$$

21. $x < 1 \text{ or } x > 3$

22. $6h \leq 75$

$h \leq 12.5$

23. You need at least 150 cups of lemonade but less than 225 cups of lemonade for a picnic. Each batch of lemonade makes 25 cups of lemonade. Write and solve an inequality that represents the number of batches b you need to make.

$$b > 15$$

$$b < 225$$

$$\frac{150}{25} \leq \frac{25b}{25} < \frac{225}{25}$$

$$6 \leq b < 9$$

23. $150 \leq 25b < 225$

$6 \leq b < 9$

24. $\frac{245+m}{7} \geq 50$

$m \geq 105$

24. You have a goal to practice the piano for an average of at least 50 minutes per day for one week. The first six days you practice a total of 245 minutes. Write and solve an inequality that represents the number of minutes m you need to practice on the seventh day.

$$\frac{245 + m}{7} \geq 50$$

$$\begin{array}{r} 245 + m \geq 350 \\ -245 \quad -245 \end{array}$$

$$m \geq 105$$

25. The cost to rent a construction crane is \$1500 per day plus \$250 per hour of use. Write and solve an inequality that can be used to determine the maximum number of hours h the crane can be used if the rental cost for one day will not exceed \$5000.

$$\begin{array}{r} 1500 + 250h \leq 5000 \\ -1500 \quad -1500 \end{array}$$

$$250h \leq 3500$$

$$h \leq 14$$

25. $1500 + 250h \leq 5000$

$h \leq 14$