

4.1 HW

Solve each inequality.

$$1) \begin{array}{r} -9 \leq n - 8 \\ +8 \quad +8 \end{array}$$

$$\boxed{-1 \leq n}$$

$$2) \left(\frac{b}{6}\right) > 7 \quad | \cdot 6$$

$$\boxed{b > 42}$$

$$3) 6 - 3r + 5 \leq 8$$

$$\begin{array}{r} 11 - 3r \leq 8 \\ -11 \quad -11 \\ -3r \leq -3 \\ -3 \quad -3 \end{array}$$

$$\boxed{r \geq 1}$$

$$5) -7 - 6n \leq 1 - 7n$$

$$\begin{array}{r} -7 - 6n \leq 1 - 7n \\ +7 \quad +7 \\ -6n \leq 8 - 7n \\ +7n \quad +7n \end{array}$$

$$\boxed{n \leq 8}$$

$$7) 88 > -8(-p - 7)$$

$$\begin{array}{r} 88 > 8p + 56 \\ -56 \quad -56 \end{array}$$

$$\begin{array}{r} 32 > 8p \\ 8 \quad 8 \end{array} \quad \boxed{4 > p}$$

$$4) p + 6p \leq 21$$

$$\begin{array}{r} 7p \leq 21 \\ 7 \quad 7 \end{array}$$

$$\boxed{p \leq 3}$$

$$6) n - 4 - 1 > 4n - 4n$$

$$\begin{array}{r} n - 5 > 0 \\ +5 \quad +5 \end{array}$$

$$\boxed{n > 5}$$

$$8) -8(r - 6) < 23 - 3r$$

$$\begin{array}{r} -8r + 48 < 23 - 3r \\ +8r \quad +8r \end{array}$$

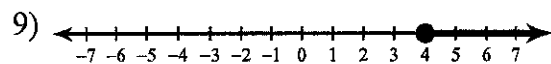
$$48 < 23 + 5r$$

$$\begin{array}{r} -23 \quad -23 \\ 25 < 5r \end{array}$$

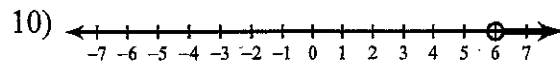
$$\begin{array}{r} 25 < 5r \\ 5 \quad 5 \end{array}$$

$$\boxed{5 < r}$$

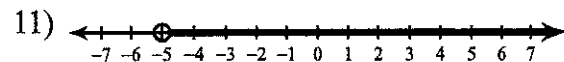
Write an inequality for each graph.



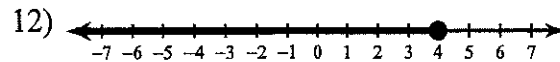
$$x \geq 4$$



$$x > 6$$



$$x > -5$$



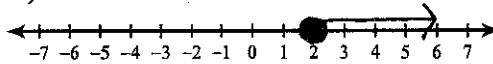
$$x \leq 4$$

Draw a graph for each inequality.

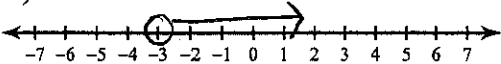
13) $p \leq 3$



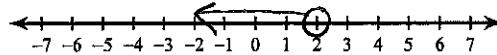
14) $b \geq 2$



15) $-3 < r$



16) $2 > x$



- 17) A prom ticket at Smith High School is \$120. Tom is going to save money for the ticket by walking his neighbor's dog for \$15 per week. If Tom already has saved \$22, what is the minimum number of weeks Tom must walk the dog to earn enough to pay for his prom ticket?

$$15x + 22 \geq 120$$

$$\frac{15x}{15} \geq \frac{98}{15}$$

$$x \geq 6.5\bar{3}$$

7 weeks

- 19) Mr. Braun has \$75 to spend on pizza and soda for a picnic. Pizza costs \$9 per pie and each drink costs \$0.75. Five times as many drinks as pizzas are needed. What is the maximum number of pizzas that Mr. Braun can buy?

$$75 \geq 9x + 5(0.75x)$$

$$75 \geq 12.75x$$

$$5.88 \geq x$$

5 pizza pies

- 18) Chelsea has \$45 to spend at the fair. She spends \$20 on admission and \$15 on snacks. She wants to play a game that costs \$0.65 per game. Write an inequality to find the maximum number of times, x , Chelsea can play the game. Using the inequality, determine the maximum number of times she can play the game.

$$45 \geq 20 + 15 + 0.65x$$

$$45 \geq 35 + 0.65x$$

$$10 \geq 0.65x$$

$$15.4 \geq x$$

15 games

- 20) The Eye Surgery Institute just purchased a new laser machine for \$500,000 to use during eye surgery. The Institute must pay the inventor \$550 each time the machine is used. If the Institute charges \$2,000 for each laser surgery, what is the minimum number of surgeries that must be performed in order for the Institute to make a profit?

$$500000 \leq 2000x - 550x$$

$$500000 \leq 1450x$$

$$344.8 \leq x$$

345 surgeries.