$\qquad$
$\qquad$

## Chapter 9 Review

## For \#1 to \#6, write the term from the box that completes each statement.

| algebra | boundary point <br> open circle | closed circle <br> inequality |
| :--- | :--- | :--- |

1. A mathematical statement that compares expressions that may not be equal is called $a(n)$
$\qquad$
2. You can show inequalities on a number line or with $\qquad$ using symbols.
3. On a number line, $\mathrm{a}(\mathrm{n})$ $\qquad$ shows that the boundary point is not a possible solution.
4. For the inequality $x>5$, the value of 7 is a possible $\qquad$
5. On a number line, the value that separates solutions from non-solutions is called the
$\qquad$
6. On a number line, $\mathrm{a}(\mathrm{n})$ $\qquad$ shows that the boundary point is a possible solution.
9.1 Representing Inequalities, pages 504-514
7. A business is advertising a sale. Write each statement as an inequality.
a) Savings of up to $40 \%$
b) Over 80 major items on sale
Savings $\qquad$
b)
$\qquad$
8. Use words and algebra to show each inequality.
a)


Words: A number $\qquad$
(greater or less)
than $\qquad$
Algebra: $x$ $\qquad$


Words: $\qquad$
$\qquad$

Algebra: $\qquad$

Name: $\qquad$
$\qquad$
9. Complete the number line to show each inequality.

State one value that is a solution. State one value that is not a solution.
a) $r>-4$
b) $s \leq 7$


Solution: $\qquad$

Non-solution: $\qquad$


Solution: $\qquad$ Non-solution: $\qquad$

### 9.2 Solving Single-Step Inequalities, pages 516-527

10. Verify that the solution shown on the number line is correct.

If the number line is incorrect, write the correct solution.
a) $-5 x \geq-40$


Check $x=8$ :

| Left Side | Right Side |
| :---: | :---: |
| $-5 x$ | -40 |
| (True or False ) |  |

Check $x>8$. Use $x=$ $\qquad$ :

$$
-5 x>-40
$$

$\qquad$
(True or False)

The solution is $\qquad$ .
(correct or incorrect)
If incorrect, write the correct solution.


Name: $\qquad$ Date: $\qquad$
11. Solve each inequality.
a) $d-7>-10$
b) $\frac{c}{-5}>3.2$

When you multiply or divide
by a negative, change the inequality sign.
12. Tim earns $\$ 15 / \mathrm{h}$ working during the summer.

His goal is to earn at least $\$ 600$ each week.
How many hours will Tim need to work each week to achieve his goal?
a) Write an inequality to model the problem.

Variable: Let $\qquad$ $=$ $\qquad$
Inequality: $\qquad$
b) Solve the inequality and write a sentence to explain the solution.

Sentence: $\qquad$

### 9.3 Solving Multi-Step Inequalities, pages 529-543

13. Verify whether $x \geq 5$ is the correct solution for $5 x+4 \leq 6 x-1$.

| Check $x=5$ : <br> Left Side | Right Side |
| :---: | :---: |
| $\begin{gathered} 5 x+4 \\ =5(5)+4 \end{gathered}$ | $\begin{aligned} & 6 x-1 \\ = & 6(5)-1 \end{aligned}$ |
| $=\ldots+4$ | $=-\ldots$ |
| $=$ | $=$ |
|  | _ statement |
| (True or Fals |  |

Check $x>5$. Use $x=$ $\qquad$ : $5 x+4<6 x-1$

The solution is $\qquad$ (correct or incorrect)

Name: $\qquad$
14. Solve each inequality. Then, verify the solution.
a) $\frac{x}{3}-5<10$

Check:
b) $5 x+8<4 x-12$

Subtract 8.
Subtract $4 x$.
Check:

Check:
15. A committee is planning a banquet.

The dinner costs $\$ 450$ plus $\$ 24$ per person.
The committee needs to keep the total cost under $\$ 2000$.
How many people can attend the banquet?
a) Write an inequality to model the problem.

b) Solve the inequality. Write a sentence to explain the situation.
$\qquad$

