

**WORKSHEET 3.11: WRITING INEQUALITIES**

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The symbols below are used to write inequalities. The inequality symbols show that two expressions are not equal.  $n$  represents a number.

- The symbol  $<$  means "is less than." *Example:* The sum of a number and 4 is less than 10.  $n + 4 < 10$
- The symbol  $>$  means "is greater than." *Example:* The product of 3 and a number is greater than 15.  $3n > 15$
- The symbol  $\leq$  means "is less than or equal to," "is no greater than," or "is at most." *Example:*  $-3$  times a number is at most 1.  $-3n \leq 1$
- The symbol  $\geq$  means "is greater than or equal to," "is at least," or "is no less than." *Example:* Twice a number is at least 8.  $2n \geq 8$

**DIRECTIONS:** Write an inequality for each statement. Use  $n$  to represent a number in problems 4 through 10.

1. 5 is less than 10.
2.  $-2$  is greater than  $-4$ .
3. 3 is greater than or equal to 0.
4. 2 less than a number is at most 16.
5. 4 times a number is at least 15.
6. The sum of a number and  $-2$  is no less than 5.
7. A number divided by 5 is at most 21.
8. The product of 5 and a number is greater than 90.
9. Sam's test score exceeded 90 percent.
10. At least 300 people ran a five-kilometer race.



**CHALLENGE:** Explain the difference in the meaning of "7 less than a number" and "7 is less than a number."

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**DIRECTIONS:** Write an inequality for each statement. Use  $n$  to represent a number in problems 4 through 10.

1. 5 is less than 10.

$$5 < 10$$

2.  $-2$  is greater than  $-4$ .

$$-2 > -4$$

3. 3 is greater than or equal to 0.

$$3 \geq 0$$

4. 2 less than a number is at most 16.

$$n - 2 \leq 16$$

5. 4 times a number is at least 15.

$$4n \geq 15$$

6. The sum of a number and  $-2$  is no less than 5.

$$n + (-2) \geq 5$$

7. A number divided by 5 is at most 21.

$$\frac{n}{5} \leq 21$$

8. The product of 5 and a number is greater than 90.

$$5n > 90$$

9. Sam's test score exceeded 90 percent.

$$n > 90\%$$

10. At least 300 people ran a five-kilometer race.

$$n \geq 300$$



**CHALLENGE:** Explain the difference in the meaning of "7 less than a number" and "7 is less than a number."

7 less than a number is an expression that can be written as  $n - 7$ . 7 is less than a number is an inequality written as  $7 < n$ .