Lesson 21: Writing Inequalities

You can write inequalities that describe a real-world situation.
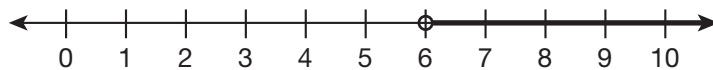
▷ Example

Write and graph an inequality to represent the following situation.

During the school year, Hermano has to write more than 6 essays for his English class.

$n > 6$

In the inequality above, *n* must be greater than 6. It could be 7, 8, or even 200. There are an infinite number of solutions for the inequality. The following graph shows $n > 6$.


The empty circle shows that 6 is not a solution. The dark arrow to the right shows that Hermano has to write more than 6 essays.

▷ Example

Write and graph an inequality to represent the following situation.

Isaac needs to spend less than $4 on a new notebook.
Use a variable to represent how much Isaac can spend. You can use *d* for the number of dollars. Because *d* must be less than 4, the inequality is $d < 4$. The following graph shows $d < 4$.
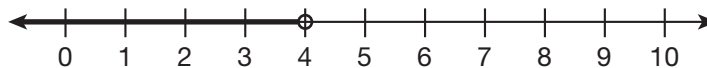
Any number less than 4 would be a solution.

▷ **Example**

A computer company makes a new laptop that weighs less than 5 pounds. Write an inequality to represent this scenario. Then graph the inequality and write a possible solution.

Use a variable to represent how much the laptop can weigh. You can use p for the number of pounds. The variable p must be less than 5. Therefore, the following inequality represents the scenario.

$p < 5$

To make the graph, draw a circle at 5. Then draw a line that points to the left to show that any value less than 5 is a solution. The following graph shows $p < 5$.

A possible weight for the laptop computer is 4.2 pounds.

▷ **Example**

A passenger on a roller coaster must be more than 3 feet tall. Write an inequality to represent this scenario. Then graph the inequality and write a possible solution.

Use a variable to represent how tall the person can be. You can use f for the number of feet. The variable f must be greater than 3. Therefore, the following inequality represents the scenario.

$f > 3$

To make the graph, draw a circle at 3. Then draw a line that points to the right to show that any value greater than 3 is a solution. The following graph shows $f > 3$.
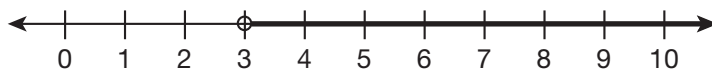
A possible height for a passenger is $3\frac{1}{2}$ feet.