

Lesson 62: Inequalities

Purpose of lesson: You will learn what ***inequalities*** are, and also how to solve and use equations with **inequalities**.

Words to Know: Inequalities are algebra equations that use these symbols:

> and <

> means **greater than**

< means **less than**



I will help you learn about inequalities.

This is how they look:

$n + 4 > 10$ OR

$x - 1 < 8$ for example.

We solve **inequalities** the same way we solve **algebra equations**, by substituting a number in place of the letter to make it a true statement.

For example:

a) $n + 4 > 10$For this to be true, what number can you put in place of **n** to make it true?

1) $n = 6$

2) $n = 7$

3) $n = 5$

4) $n = 4$

The only number that fits is **7**, because:

$$n + 4 > 10$$

$$7 + 4 > 10$$

$$11 > 10 \text{ (11 is greater than 10!)}$$

Let's try another one!

b) $n - 7 < 12$For this to be true, what is the value of n in this inequality?

1) $n = 10$

2) $n = 19$

3) $n = 21$

4) $n = 29$

The only number that fits is **10**, because $10 - 7 < 12$. $10 - 7 = 3$. 3 is less than 12!

Now it's your turn to try some.

Take Lesson 62 Quiz 1



> and < can be used in a different way!

For example:

c) $9 > 11 - n$ You need to find a number to make this inequality true.

A) $n > 2$

B) $n < 2$

C) $n < 1$

D) $n < 0$

NOTE: Try:

Option A ($n > 2$) so if we use $n = 3$, our equation would be $9 > 11-3$ or $9 > 8$. This is true.

Option B ($n < 2$) so if we use $n = 1$, our equation would be $9 > 11-1$ or $9 > 10$. This is not true.

Option C ($n < 1$) so if we use $n = 0$, our equation would be $9 > 11 - 0$ or $9 > 11$. This is not true.

Option D ($n < 0$) so if we use $n = -1$, our equation would be $9 > 11 - (-1) = 9 > 11 + 1$ or $9 > 12$. This is not true.

Answer Option A: $n > 2$.

Try another one:

d) $14 - x > 12$

A) $x > 5$

B) $x > 6$

C) $x < 2$

D) $x = 2$

Note: To solve for the correct answer, substitute "number" values for the "letter" unknown and find which value fits the expression.

Now you try some.

Take Lesson 62 Quiz 2