

Grade 6 and 7-Algebra

SAMPLE PROBLEM 3

In mathematics, inequalities are used to compare the relative size of values. They can be used to compare integers, variables, and various other algebraic expressions.

1. The notation $a < b$ means that a is less than b
2. The notation $a > b$ means that a is greater than b

Let's solve a word problem on Inequalities

Gloria starts with five times as much money as Hamish. Gloria gives \$8 to Hamish, and then Hamish has more money than Gloria. If Hamish starts with \$ h , then write inequality for h ?

STEP 1:

Let us take 'g' for Gloria and 'h' for Hamish.

STEP 2:

The question says,

Gloria starts with five times as much money as Hamish,

So,

$$g = 5h$$

STEP 3:

Gloria gives \$8 to Hamish,

So, g is now $g-8$

STEP 4:

Hamish has \$8 more now

So, h is now $h+8$

STEP 5:

So, The Inequality is

$$g - 8 < h + 8$$

This equation depicts the situation only after Gloria gives \$8 to Hamish.

STEP 4:

But we know from STEP 2 that Gloria started with 5h

Plugging in the value of $g = 5h$,

$$5h - 8 < h + 8$$

STEP 5:

Solving the Inequality,

$$5h - 8 < h + 8$$

Adding 8 on both sides,

$$4h < 16$$

Dividing 4 on both sides,

$$h < 4$$

The Inequality Equation is $h < 4$

From this we understand that

The equation $g = 5h$ and the inequality $g - 8 < h + 8$ holds good only for value of $h < 4$.
