Bridge – Introduction to Variables Name:_____

In the last chapter, you worked with lengths, moving back and forth on a number line, and comparing signed numbers (+ and −). But what if there are lengths you *do not* know? In this lesson, you will use clues to find unknown values. Unknown values are often represented by **variables**. Finding unknown values is one of the most important parts of algebra. Today's work will give you the background you will need for your upcoming work with variables. As you work with your team today, keep these questions in mind:

How can I represent or visualize this situation?

What information *do* I know?

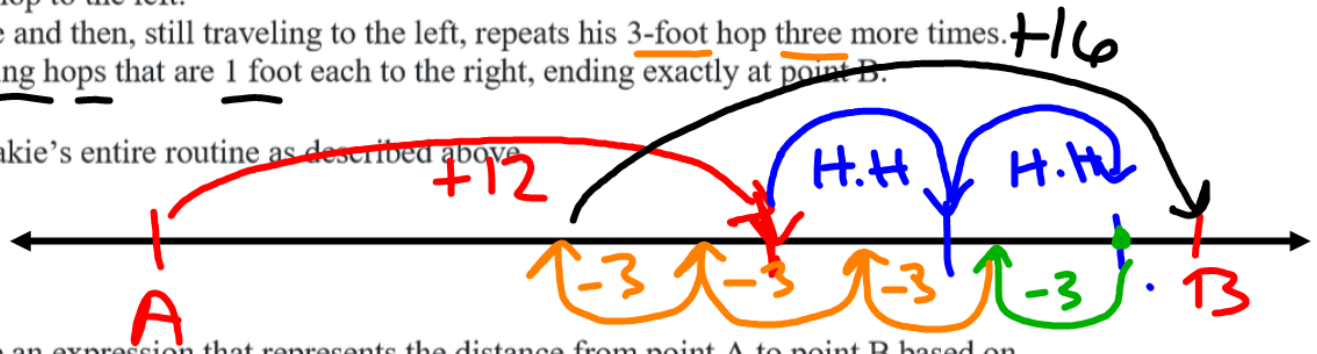
What information do I need to find?

4-1.
CROAKIE THE TALENTED FROG

Croakie is a very talented frog. He does tricks for the audiences at the Calaveras County Fair contest every year. Some of his tricks are quickly making him famous. He not only hops, but he can also do a "hip hop" jump, along with other exciting tricks. Just how long is his "hip hop" jump, assuming he travels the exact same distance each time? Read the description of his special routine below. Then complete parts (a) through (d) that follow.

- Croakie starts at point A. He hops 12 feet to the right, toward point B.
- Then he does two "hip hop" jumps in a row, still traveling to the right.
- He turns and makes a 3-foot hop to the left.
- He stops to regain his balance and then, still traveling to the left, repeats his 3-foot hop three more times.
- He turns and makes 16 spinning hops that are 1 foot each to the right, ending exactly at point B.

a. Draw a diagram to show Croakie's entire routine as described above.



b. Work with your team to write an expression that represents the distance from point A to point B based on Croakie's moves.

Point A to B: $+12+H.H.+H.H.-3-3-3-3+16$; $12+2(H.H.)-4(3)+16$

c. Jill is one of Croakie's biggest fans. From watching his act, she estimates that his "hip hop" jumps are each 5 feet long. If Jill is correct, how far is it from point A to point B? Explain.

$12+5+5-12+16=26$

If each H.H. is 5 feet, point A is 26 ft away from point B.