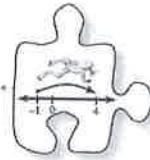


3.2.2 Where does it land?

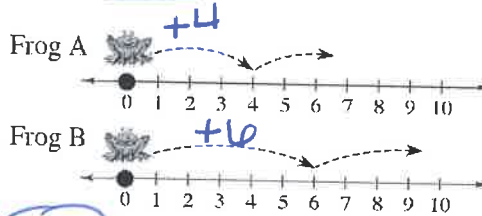
Locating Negative Numbers



~~In the last lesson, you looked at how a frog could hop in different directions along a number line. Sometimes it could end up on the other (opposite) side of zero and other times end up in the same place after a series of hops.~~

3-99. Elliot is working on his frog video game again. He has designed a new game with two frogs, each on their own number line. Each frog starts at 0, each hop is the same distance, and each hop is always to the right. The person playing the game gets to choose numbers on the number line. Points are scored for choosing a number that both frogs will land on.

a) Your Task: Determine if the frogs in the games at right will ever land on the same number(s). If not, why not? If so, which number(s) will they both land on? Draw diagrams to justify your answers.



- i. What if Frog A hops to the right 4 units at a time and Frog B hops to the right 6 units at a time?
- ii. What if Frog A hops 15 units at a time and Frog B hops 9 units at a time?

b) How did you use the length of the frogs' jumps to determine your answers in part (a)? With your team, find a method for determining all of the numbers that both frogs will land on.

3-100 Each expression below could represent the hops of a frog on a number line. Draw a number line on your paper and use it to find the answer.

- a. $-2 - 9$
- b. $5 - 5$
- c. $-(-4) + 7$
- d. $-6 + 2$

★ Think about which direction is (+) and which is (-)

3-99 i) yes, both frogs will land on ,
 and . I created a list of places where
 the frogs will land to help me.

Frogs

A: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40 (+4)

B: 6, 12, 18, 24, 30, 36, 42, 48, 54, 60 (+6)

ii) yes, both frogs land on and .

Frogs

A: 15, 30, 45, 60, 75, 90 (+15)

B: 9, 18, 27, 36, 45, 54, 63, 72, 81, 90 (+9)

③ My method for determining landing places
 for both frogs was to make a list of multiples.
 I looked for numbers that were found in
the list for both frogs.

3-100

