Assessment : End-of-Unit Assessment

Problem 1

Students choose the number that could be represented by the point on the number line. Students may choose C if they understand the number represented by the point must be greater than the midpoint of 25, but do not consider the position of the point relative to the midpoint. Students who choose A or B need further practice with the structure of the number line, specifically the requirement of numbers being equally spaced.

Statement

What number could the point represent?

A. 10

B. 25

C. 30

D. 40

Solution

D

Aligned Standards

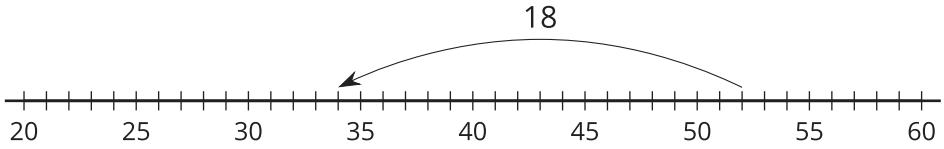
2.MD.B.6

Problem 2

Students match a number line diagram with equations having an unknown. Without an unknown, the diagram represents the equation $52 - 18 = 34$. The jump or difference 18 is labeled so the unknown could be the starting point, 52, and that gives the equation $? - 18 = 34$. Or the unknown could be the landing point and then the equation would be $52 - 18 = ?$. Response A has the right operation and the right numbers but the numbers are in the wrong place. Response B has the correct numbers but the wrong operation, that is, it would be represented by the same diagram with the arrow in the opposite direction. Response D has the wrong operation and the result would not be on this graph.

Statement

Select **2** equations that the number line diagram represents.



A. $? - 18 = 52$

B. $34 + 18 = ?$

C. $52 - 18 = ?$

D. $52 + 18 = ?$

E. $? - 18 = 34$

Solution

["C", "E"]

Aligned Standards

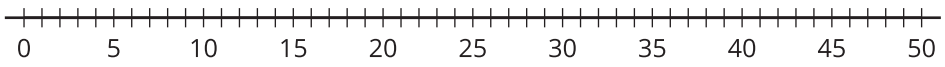
2.MD.B.6

Problem 3

Students locate numbers on a number line and then use the number line to find their difference. Students have seen two ways to calculate differences on the number line. In this situation, they could jump back 38 from 43 and see that they land on 5 or they could notice that if they add on 5 from 38 they land on 43.

Statement

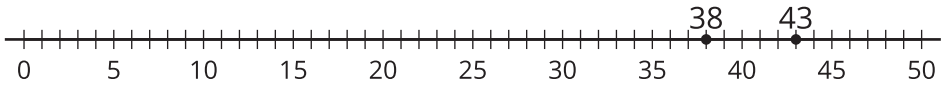
1. Locate and label 43 and 38 on the number line.



2. Explain how to use the number line to find the value of $43 - 38$.

Solution

1.



2. The number line shows that 43 is just 5 from 38, $43 - 38 = 5$.

Aligned Standards

2.MD.B.6, 2.NBT.B.5

Problem 4

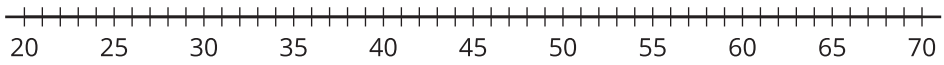
Students represent equations on the number line. They represent one addition equation and one subtraction equation. For the addition equation, the jump or difference is unknown so they will likely label the arrow with a question mark. For the second problem where it is the destination that is unknown, they

may label the tick mark 36 with a ? but this is not required. For the second problem, they may make several jumps instead of just one. For example, they may make a jump of 10 and a jump of 7 or they may make a jump of 4, then a jump of 10, then a jump of 3.

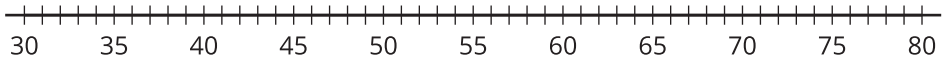
Statement

Represent each equation on the number line.

1. $25 + ? = 44$

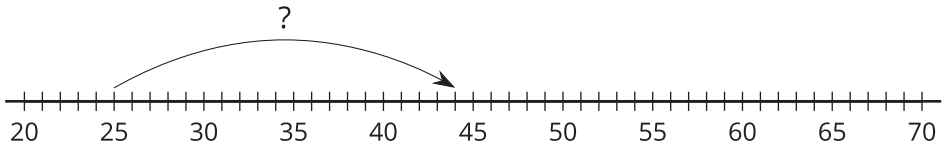


2. $53 - 17 = ?$

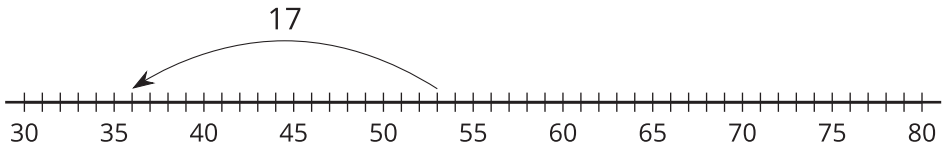


Solution

1.



2.



Aligned Standards

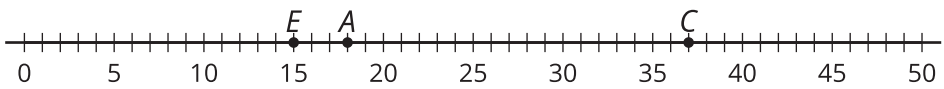
2.MD.B.6

Problem 5

Students solve a two-step story problem and may represent it on the number line. The information is presented on a number line. After identifying the numbers from the number line, students solve one-step and two-step story problems about the information. Some students may use the answer to the comparison between Elena and Andre and Clare to answer the final question about the total number of seashells. If they do so, then their answer to the final question should be evaluated based on their calculation of Elena's and Andre's seashells even if this calculation is not correct.

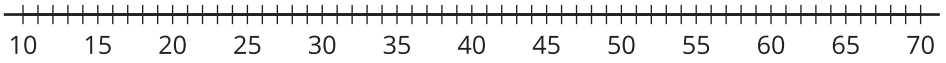
Statement

Andre, Clare, and Elena collected seashells at the beach. The number line shows how many seashells each student collected.



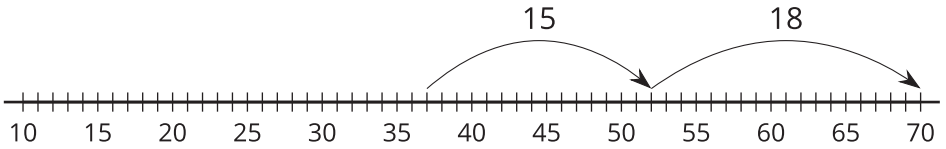
1. Who collected the most seashells? Who collected the fewest?

2. Clare says she collected more seashells than Elena and Andre together. Do you agree with Clare? Explain or show your reasoning.
3. How many seashells did Andre, Clare, and Elena collect together? Explain or show your reasoning. Use the number line if it is helpful.



Solution

1. Clare collected the most and Elena collected the fewest.
2. Elena collected 15 seashells and Andre collected 18 seashells and Clare collected 37. I know $37 - 15$ is 22 since I can take away a ten and 5 ones. That's more than 18 so Clare is correct.
3. Sample response: 70, I used the number line to add the numbers. I started with Clare's 37 shells, added Elena's 15 and then Andre's 18.



Aligned Standards

2.MD.B.6, 2.NBT.B.5, 2.OA.A.1