Assessment : End-of-Unit Assessment

Problem 1

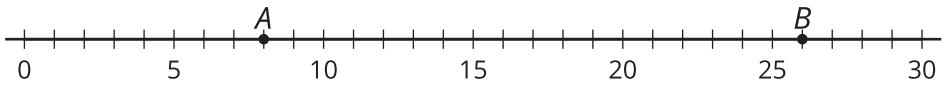
Standards Alignments

Addressing 2.MD.B.6

Narrative

Students interpret equations and inequalities comparing numbers given on a number line. Students who select B or C or do not select A need further practice with number line diagrams and the meaning of the $<$, $>$, and $=$ symbols. Students who select E or fail to select D or F need more practice interpreting operations on the number line.

Select **3** true statements about the numbers on the number line.



A. $A < B$

B. $A = B$

C. $A > B$

D. $A + 18 = B$

E. $B + 18 = A$

F. $A = B - 18$

Solution

["A", "D", "F"]

Problem 2

Standards Alignments

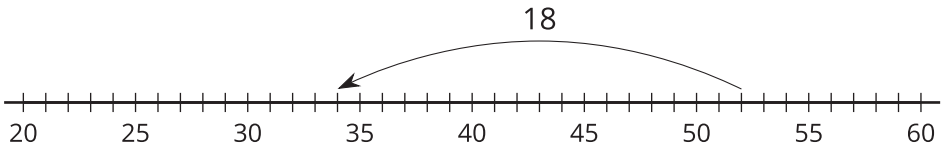
Addressing 2.MD.B.6, 2.OA.A.1

Narrative

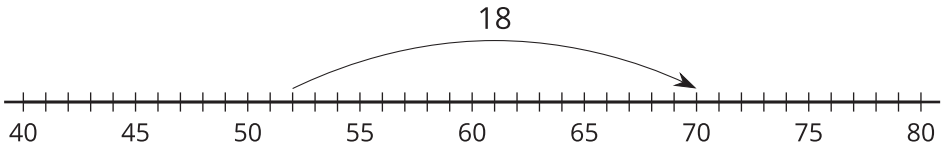
Students select a number line diagram, a tape diagram, and an equation representing a story problem. In each case, there is one correct representation and one incorrect representation with the incorrect one using the correct set of numbers but the wrong operation.

Noah has 52 comic books. He has 18 more comic books than Jada. Choose **3** representations for the number of Jada's comic books.

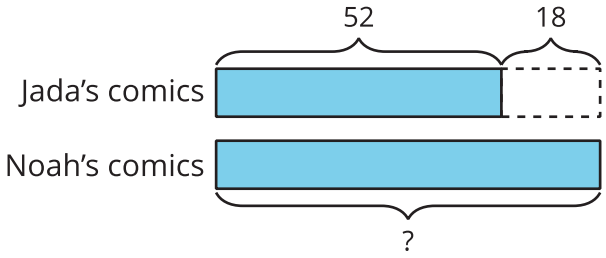
A.



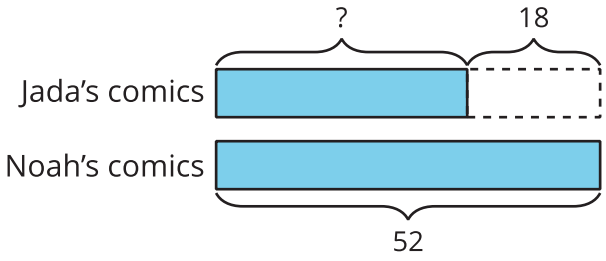
B.



C.



D.



E. $52 - 18 = ?$

F. $52 + 18 = ?$

Solution

["A", "D", "E"]

Problem 3

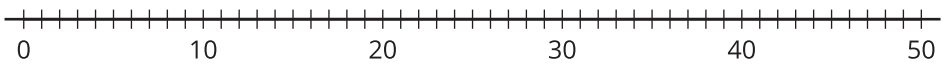
Standards Alignments

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

Narrative

Students plot numbers on a number line and then use the number line to find their difference. Students have seen two different 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 jump back 5 from 43 then they land on 38.

a. Plot 43 and 38 on the number line.



b. Explain how to use the number line to find the difference

$43 - 38$.

Solution

a.

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

Problem 4

Standards Alignments

Addressing 2.MD.B.6, 2.NBT.A.4

Narrative

Students interpret a number line diagram, estimating the value of a point and comparing that value to other numbers using the greater than or less than signs. Students may make different estimates. It is important that the estimates lie between 10 and 90 and they should be closer to 90 than to 10. If students make an incorrect comparison of Q with 10 or 90 then they need more work with the number line or with the greater than and less than signs.

A number is labeled Q on the number line.

a. Is Q greater than or less than 10? Write your answer using $<$ or $>$. Explain how you know.
b. Is Q greater than or less than 90? Write your answer using $<$ or $>$. Explain how you know.
c. Estimate Q. Explain your reasoning.

Solution

a. Q $>$ 10 because Q is to the right of 10 on the number line.
b. Q $<$ 90 because Q is to the left of 90 on the number line.
c. Q is about 70. It is more than half way from 10 to 90 and half way is 50. It is not too close to 50 or 90 so 70 is a reasonable estimate.

Problem 5

Standards Alignments

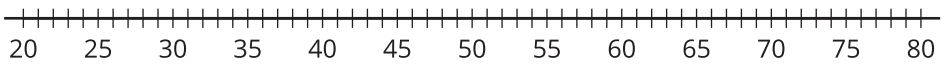
Addressing 2.MD.B.6, 2.OA.A.1

Narrative

Students represent a 2 step word problem on the number line and solve the problem. Students can use the number line in a variety of ways. They can use the number line to help with the arithmetic. For example, they might show the 15 sea shells Andre got in the morning as a jump of 10 and then another jump of 5. Or they can use the number line to help decide what arithmetic to perform.

Andre has 27 sea shells. He gets 15 more sea shells at the beach in the morning and 18 more sea shells in the afternoon.

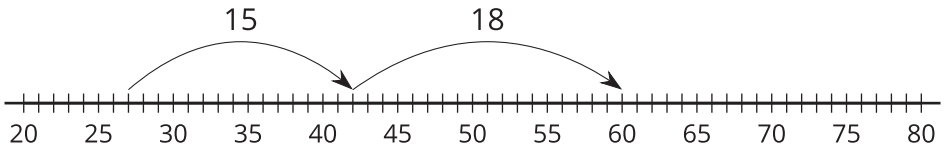
a. Represent the situation on the number line.



b. How many sea shells does Andre have now?

Solution

a.



b. 60

Problem 6

Standards Alignments

Addressing 2.NBT.B.5, 2.OA.A.1

Narrative

Students solve a story problem. Their first step is to write an equation that represents the problem using a ? for the unknown. Then they can solve in any way that makes sense to them. The language "fewer" in the story problem may suggest the wrong operation and some students may subtract 18 from 25 instead of adding.

Lin read 25 pages of a book last night. Lin read 18 fewer pages of the book than Mai. How many pages of the book did Mai read?

a. Write an equation using a ? for the unknown to represent the problem.
b. Solve the problem. Show your thinking.

Solution

a. $25 + 18 = ?$ or $? - 18 = 25$ or equivalent
b. Mai read 43 pages. $25 + 10 = 35$, $35 + 5 = 40$, $40 + 3 = 43$.