

Measurement to 100

2nd
GRADE



$$29 + 18 = 47 \text{ meters}$$

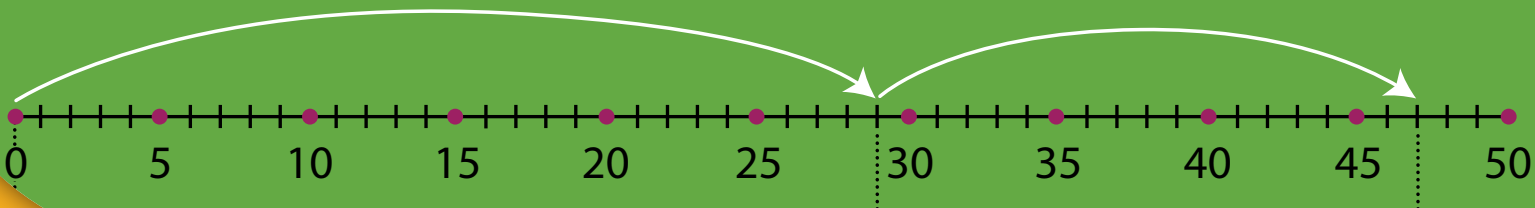


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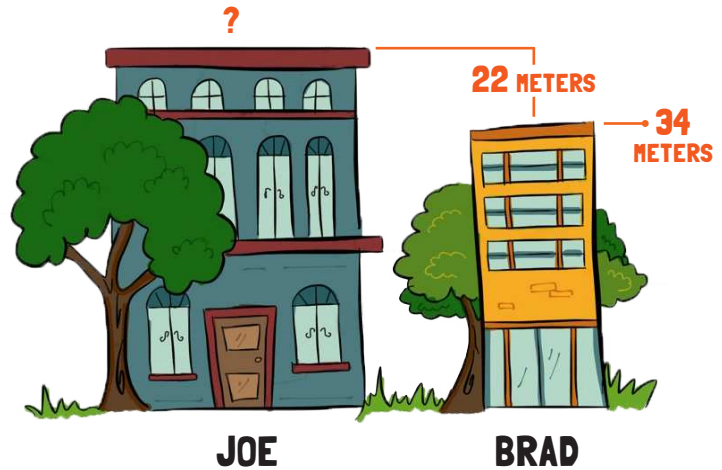
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WORD PROBLEMS USING METRIC LENGTH

You can solve problems about length by drawing a picture. Look at the example.

Brad lives in a building that is 34 meters high. Joe lives in the building next door that is 22 meters taller. How tall is Joe's building?



$$34 + 22 = \bigcirc$$

Add the height of the two buildings to find the height of Joe's building.

Solve the following problems by drawing a picture.

Jones Elementary School is 25 meters tall. Jefferson High School is next door and it is 16 meters taller than the elementary school. How tall is Jefferson High School?

Jefferson High School is _____ meters tall.

A large empty rounded rectangle with an orange border, intended for drawing a picture to solve the problem.

A fence that runs along the back side of Billy's farm is 19 meters long. His neighbor's fence is 6 meters longer than Billy's fence. How long is Billy's neighbor's fence?

Billy's neighbor's fence is _____ meters long.

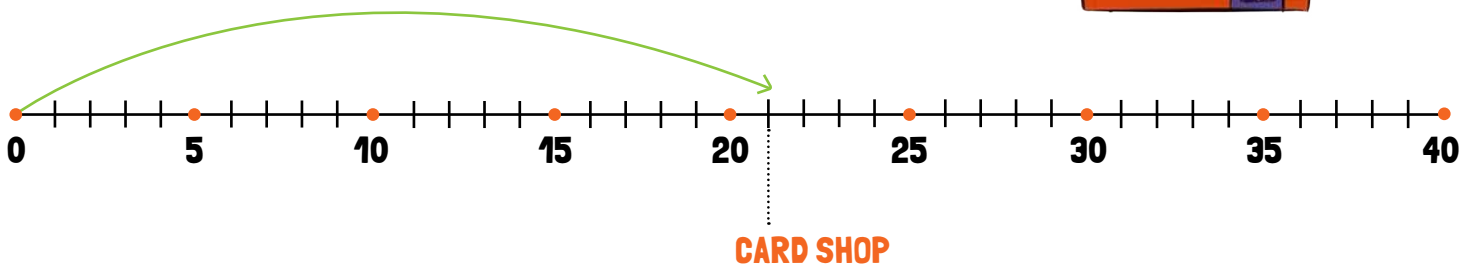
A large empty rounded rectangle with an orange border, intended for drawing a picture to solve the problem.

USING A NUMBER LINE TO SOLVE METRIC MEASUREMENT PROBLEMS

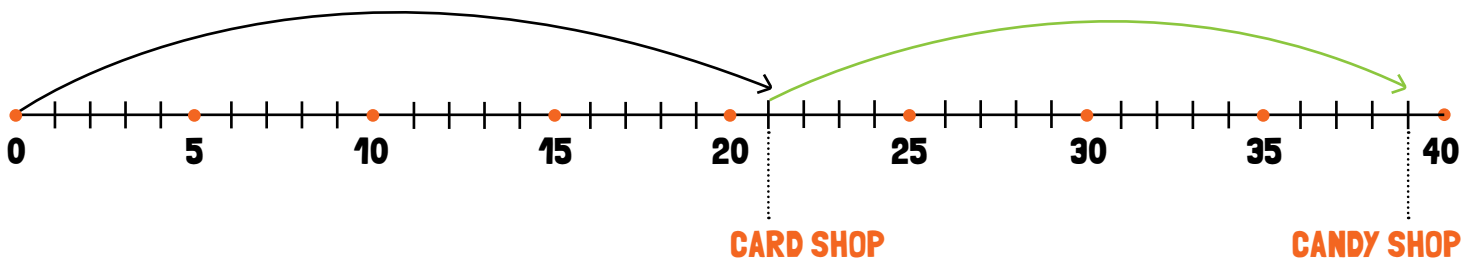
Addition

A number line is a good tool to use when solving problems about adding length. Read the problem below and follow the steps to solve the problem using the number line.

George and Annie walked 21 meters to get to the card shop. George stayed in the card shop while Annie walked 18 more meters to get to the candy shop. What was the total distance that Annie walked?



To solve the problem on a number line, you start at zero and draw an arrow to the first stop 21 meters down the number line.



Next, count 18 more spaces to get to the candy shop. The number that you end on is the answer to the problem.

$$21\text{m} + 18\text{m} = 39\text{m} \text{ so Annie walked } 39\text{m}.$$

Now, you try. Read the problems and use the number lines to help you solve them.

1

Wendy pulled out 17 centimeters of ribbon to tie on a package. It wasn't enough so she pulled out 15 more centimeters of ribbon. How much ribbon does she have now to tie on the package?

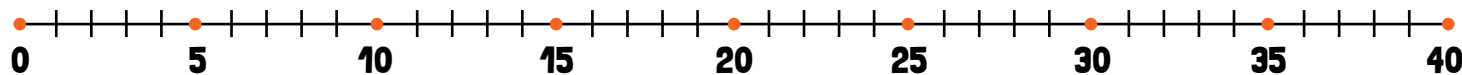


+ = so Wendy has cm of ribbon.



2

Mark lives at one end of Main Street. Sonya lives 6 km away from Mark. Rachel lives 11 km further down the street from Sonya. How far does Rachel live from Mark?

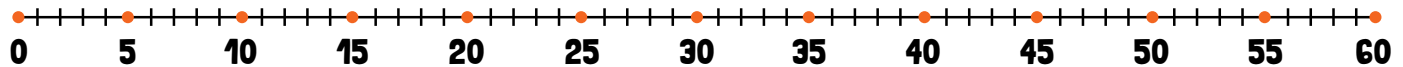


+ = so Rachel lives km away from Mark.

USING A NUMBER LINE TO SOLVE CUSTOMARY MEASUREMENT PROBLEMS

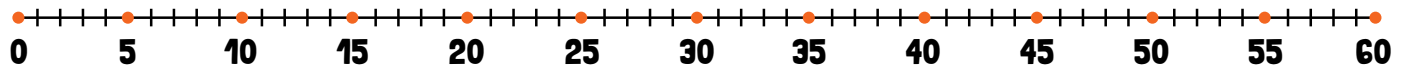
Directions: Use the provided number lines to solve these problems using customary units of measurement. Then fill in the blanks to complete the number sentence.

- 1** Susie is knitting a scarf. On Saturday night she knits 15 inches of the scarf and on Sunday she knitted 17 more inches. How long is the scarf now?



+ = Susie's scarf is inches long.

- 2** Juan runs every Tuesday and Thursday after school. He started his run at 4:00 PM on Tuesday and by 7:00 PM he had run 13 miles. On Thursday he started his run at 3:30 and by 7:00 had run 15 miles. How many miles did he run altogether?



+ = Juan ran a total miles on Tuesday and Thursday.

- 3** Melody swims a total of 22 yards in the pool when she first arrives and later swims 29 more yards. How many yards total did Melody swim in the pool?



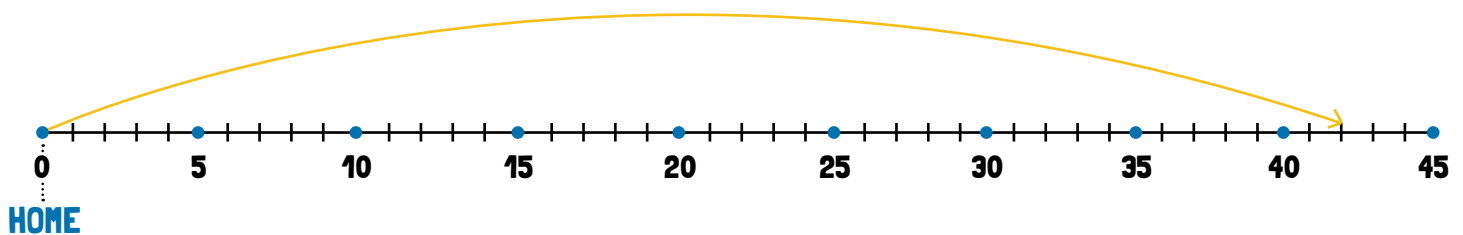
+ = Melody swam a total of yards in the pool.

USING A NUMBER LINE TO SOLVE METRIC MEASUREMENT PROBLEMS

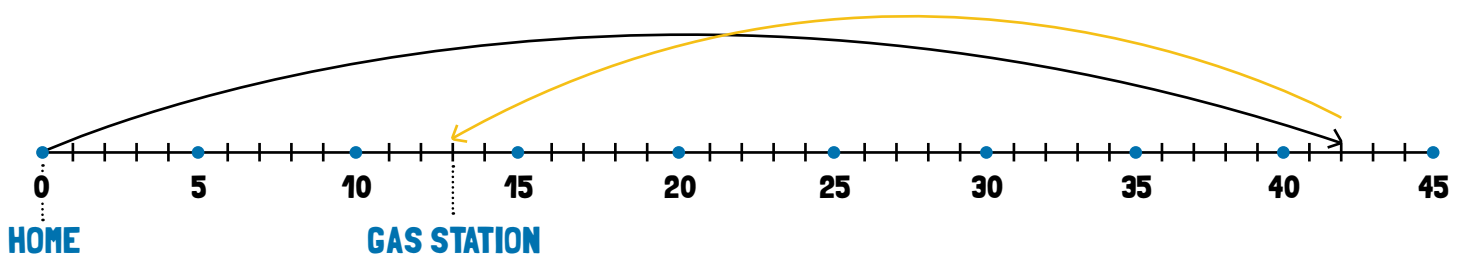
Subtraction

A number line is a good tool to use when solving problems about subtracting length. Read the problem below and follow the steps to solve the problem using the number line.

The Miller family left home and traveled 42 kilometers down the highway when Mr. Miller realized he left his credit card at the gas station they stopped at earlier. They traveled back 29 kilometers to get Mr. Miller's credit card. How many kilometers away is the Miller's home when they reach the gas station?



To solve the problem using the number line, you start at zero (the Miller's home) and draw an arrow to show the 42 km that the Millers traveled when they left home.



Next, count back 29 spaces to get the Millers to the gas station. From this step, you can see how far the Millers are from home.

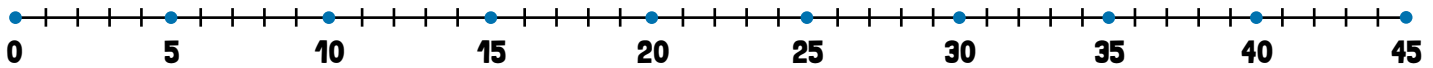
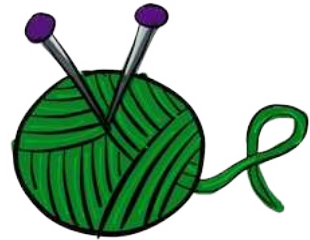
The number sentence for this problem is **$42 \text{ km} - 29 \text{ km} = 13 \text{ km}$**

The Millers are 13 km from their home.

Now, you try. Read the problems and use the number lines to help you solve them.

1

Krista cut a length of 35 cm of yarn to complete an art project. She realized she had too much and cut off 16 cm. How much yarn does Krista have left?



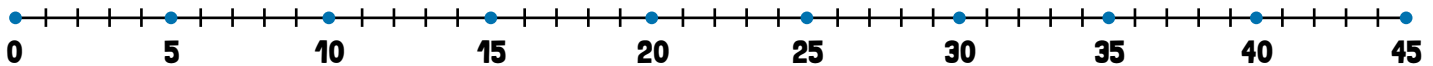
Number sentence

Krista's piece of yarn is cm long.



2

Baron left Misha's house and walked 43 meters to Todd's house. When he left Todd's house he walked 25 meters back toward Misha's to get to his own house. How far is Baron's house from Misha's house?



Number sentence

Baron's house is meters from Misha's house.

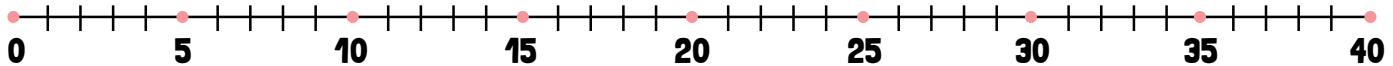


USING A NUMBER LINE TO SOLVE CUSTOMARY MEASUREMENT PROBLEMS

Directions: Use the provided number lines to solve these problems using customary units of measurement. Then fill in the blanks to complete the number sentence.

1

Carla was making a skirt for her little sister. She had 38 inches of fabric. She cut off 12 inches of fabric to make the right sized skirt. How many inches of fabric does Carla have left?

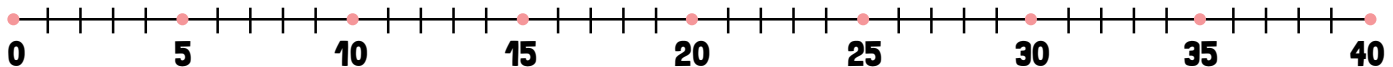


$$\square - \square = \square$$

Carla has inches of fabric left to make the skirt.

2

Pablo threw a football down the field 29 yards to Sam. Sam threw the football back toward Pablo but he was only able to throw it 18 yards. How far away is the football from Pablo?



$$\square - \square = \square$$

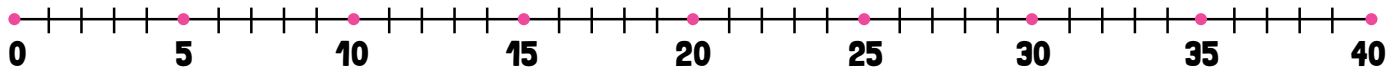
The football is yards away from Pablo.

MIXED REVIEW USING A NUMBER LINE TO SOLVE PROBLEMS

Directions: Read each problem. Use the provided number lines to solve the problem. Then write a number sentence to match the problem.

1

James was making a poster for school. He started with a piece of paper that was 36 inches long. He had to cut 12 inches off of the paper for it to be the correct length. How long is the paper now?



Number sentence

James paper is

inches long now.

2

Mrs. Hobson is sewing a button on her sweater. She takes 23 centimeters of thread off the spool for this task. However, when she looks at the thread, it doesn't seem to be enough. So, she takes 14 more centimeters of thread off the spool. How much thread did Mrs. Hobson take off of the spool altogether?



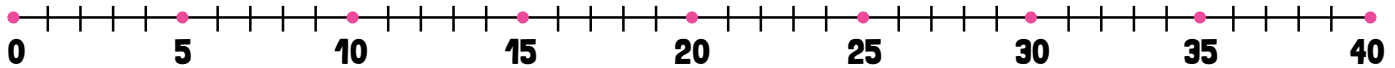
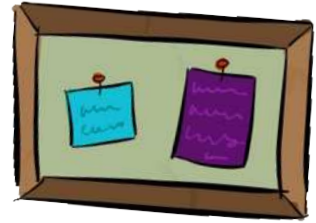
Number sentence

Mrs. Hobson has taken

centimeters of thread off the spool to sew on her button.



Andy's teacher is putting a border around a large bulletin board. She starts with a strip of border that is 36 yards long. When she measures the length around the bulletin board it is only 27 yards. How much of the border will Andy's teacher have to cut off to get the correct length?

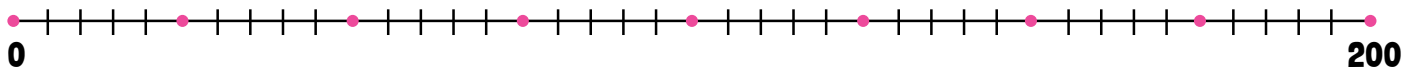


Number sentence

Andy's teacher has to cut off yards of the border to have the right amount.



Becky is helping decorate the classroom for a class party. First, she hands up a blue streamer that is 200 feet long. When it runs out, she grabs a white streamer roll that is 80 feet long. How much longer is the blue streamer than the white streamer?



For this number line, to make the numbers fit we decided to make each tick mark equal to more than one. Fill in the numbers missing from each dot to complete the number line.

Hint: Try skip-counting.

Number sentence

What does each tick mark on the number line equal?

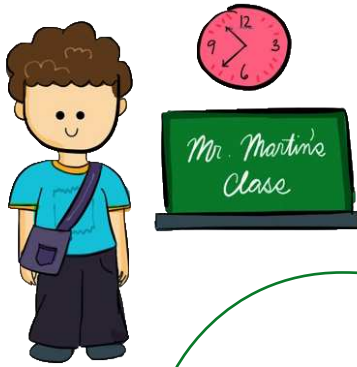
The blue streamer is feet longer than the white streamer.



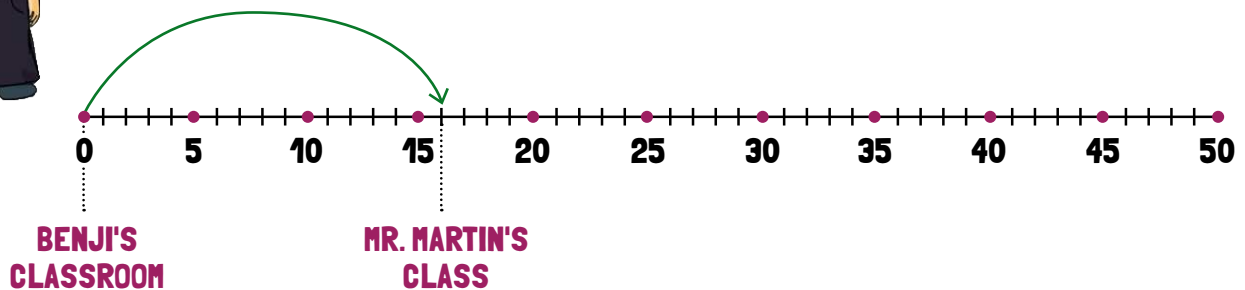
SOLVING MULTI-STEP ADDITION PROBLEMS USING A NUMBER LINE



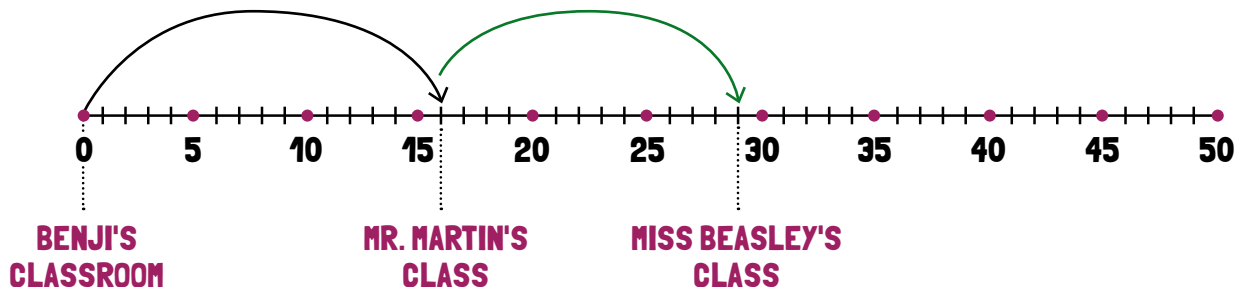
A number line can be a helpful tool when solving multi-step problems. Read the problem below and follow the steps to solve the problem using the number line.



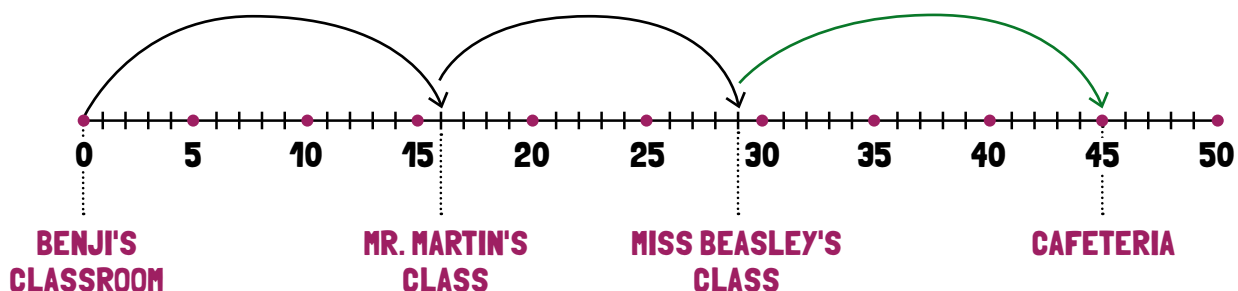
Benji left his classroom and walked down the hall 16 meters to Mr. Martin's class. Then he walked from Mr. Martin's class to Miss Beasley's class 13 meters further down the hall. After visiting Miss Beasley's class, Benji traveled 17 more meters down the hall to the cafeteria for lunch. How far is Benji's classroom from the cafeteria?



To solve the problem using the number line, you start at zero (Benji's classroom) and draw an arrow landing on the 16 to show the 16 meters that Benji traveled to get to Mr. Martin's class.

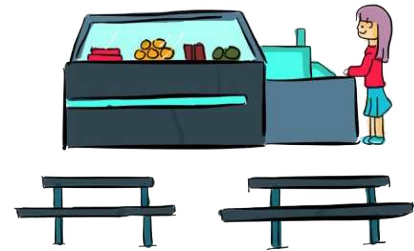


Next, count 13 more spaces on the number line and draw an arrow from the 16 to that spot. This is where Miss Beasley's class is located.



Finally, count 17 more spaces down the number line and draw an arrow to Benji's final destination, the cafeteria. The number you finally land on is your answer.

So, $16m + 13m + 17m = 45m$ and Benji's classroom is 45 meters from the cafeteria.



Now, you try. Read the problems and use the number lines to help you solve them. Then, write a number sentence to go with each problem.

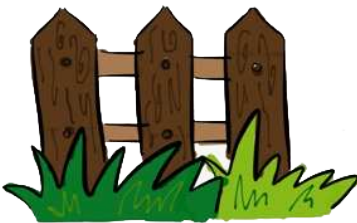


The Rogers family is going on a short trip. They leave their house and travel 22 miles and stop to eat breakfast. They get back in the car and travel another 16 miles to a rest stop. Then, they travel another 12 miles to get to the zoo. How many miles did the Rogers family drive to get to the zoo?



Number sentence

The Rogers family drove miles to get to the zoo.



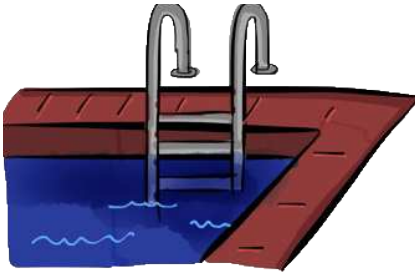
John is building a fence. The first hour he built a 14 foot section of fence. The second hour he built a 23 foot section of fence. The third hour he built a 20 foot section of fence. How long was the fence that John built in 3 hours?



Number sentence

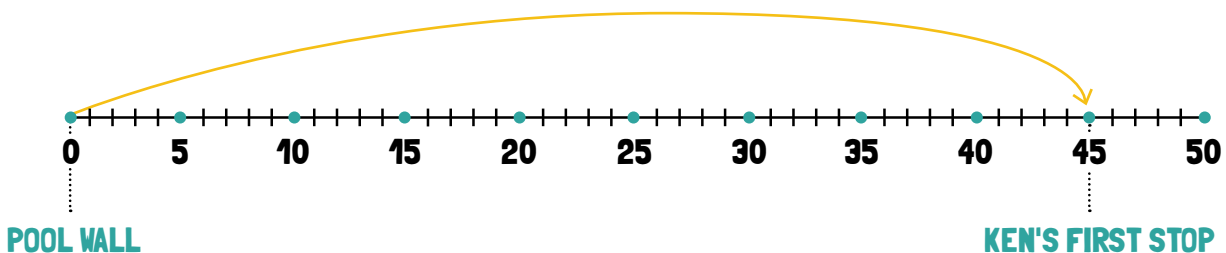
John's fence is feet long.

SOLVING MULTI-STEP SUBTRACTION PROBLEMS USING A NUMBER LINE

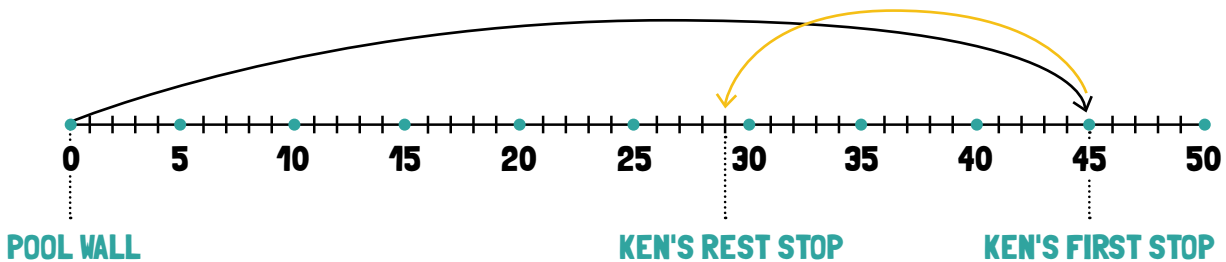


Read the problem below and follow the steps to solve the problem using the number line.

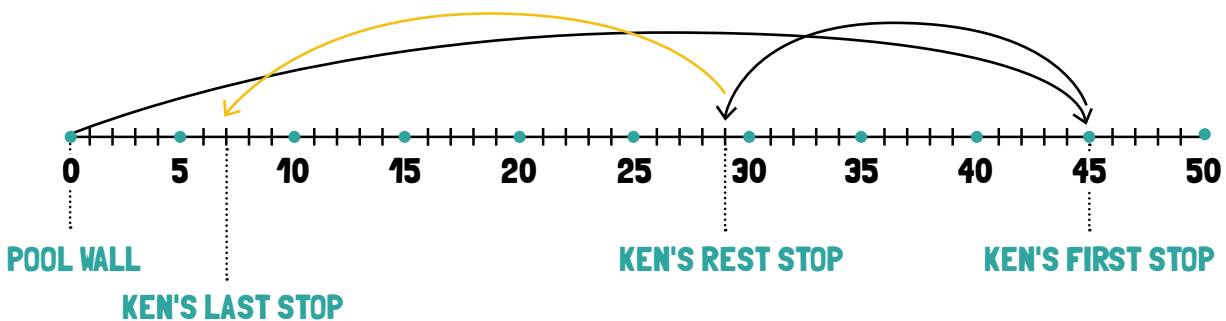
Ken was swimming in the pool. He started at the pool wall and swam 45 meters in one direction. Then, he turned around and swam back 16 meters toward the wall before stopping to take a rest. He started swimming again and swam 22 meters and then stopped. How many meters away is the wall when Ken stops this time?



To solve the problem using the number line, you start at zero (the pool wall) and draw an arrow landing on the 45 to show the 45 meters that Ken swam first.



Next, count back 16 spaces on the number line and draw an arrow from the 45 to that spot. This is where Ken stopped to rest.



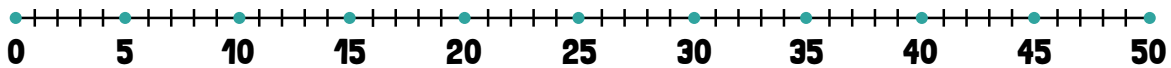
Finally, count back 22 more spaces on the number line and draw an arrow to Ken's final destination. The number you finally land on is your answer.

So, $45\text{m} - 16\text{m} - 22\text{m} = 7\text{m}$ and Ken is 7 meters away from the pool wall.

Now, you try. Read the problems and use the number lines to help you solve them. Then, write a number sentence to go with each problem.



Judy, Jane and Josie needed paper towels for a project. Judy pulled off 48 inches of paper towel from the roll. She cut off 18 inches and gave it to Jane and then cut off 15 inches and gave it to Josie. How much of the paper towel was left for Judy?



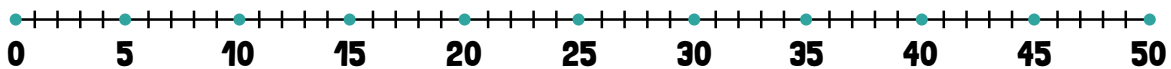
Number sentence

Judy had

inches of paper towel for her project.



Tom rode his bike 32 miles from his house to his grandfather's house on Saturday. He spent the night and headed back toward home the next day. He rode for 14 miles and stopped to visit his cousin. Then he rode another 15 miles and stopped for lunch at a restaurant. When he leaves the restaurant, how many miles must he go to get home?



Number sentence

Tom is

miles away from home when he is at the restaurant.

MIXED REVIEW MULTI-STEP PROBLEMS USING A NUMBER LINE

Directions: Read each problem. Use the provided number lines to solve the problems. Then write a number sentence to match the problem.

1

Emma was running on the playground. She started at the slide and ran 19 yards to the swings. Then, she ran another 16 yards to the see-saw. Finally, she ran 13 yards to the water fountain and stopped to have a drink. How far did Emma run?

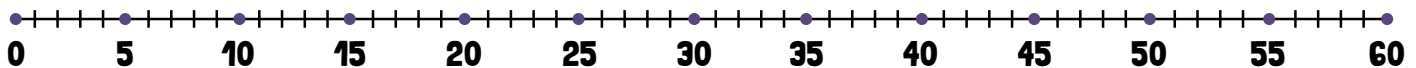


Number sentence

Emma ran yards.

2

Larry is chopping wood for his fireplace. He started with a log that was 60 inches long. He chopped off 23 inches and tried to put the log in his fireplace but it was too long. Larry chopped another 18 inches off the log to make it fit into his fireplace. How long is the log now?

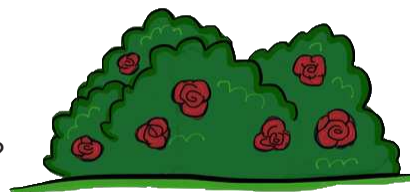


Number sentence

Larry's log is inches long.

3

Martha planted a rosebush that was 38 centimeters tall. Over the course of a month, the rosebush grew 18 centimeters. Martha then trimmed the rose off the top of the rosebush making it 7 centimeters shorter. How tall is the rosebush now?

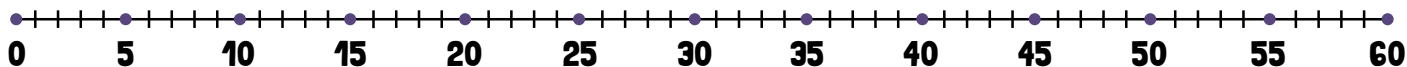


Number sentence

Martha's rosebush is centimeters tall now.

4

Sara was playing hopscotch. The hopscotch grid is 60 inches long. If Sara moved forward 14 inches in one hop, and in another hop moved another 12 inches ahead, how much farther does she have to go to get to the other end of the hopscotch?



Number sentence

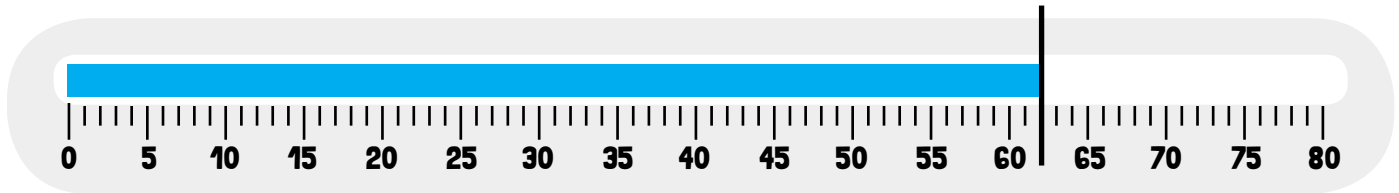
Sara has inches left of the hopscotch frame.

USING A THERMOMETER TO SOLVE TEMPERATURE PROBLEMS

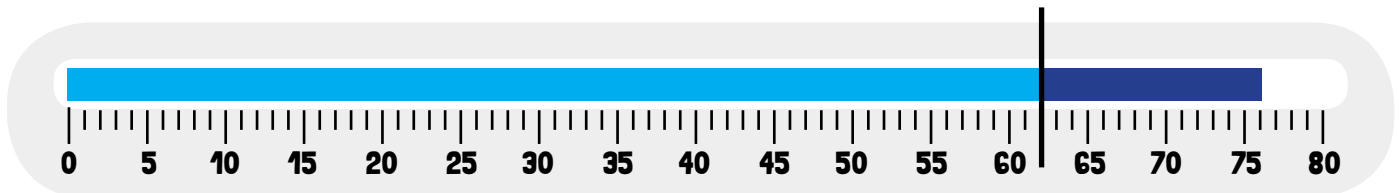
Addition

Directions: Use the thermometer to help solve the problems about temperature.

Example: The temperature on a spring morning is 62 degrees F. By noon the temperature has risen 14 degrees. What is the temperature at noon?



To solve this problem start by drawing a line at the 62 degrees mark.

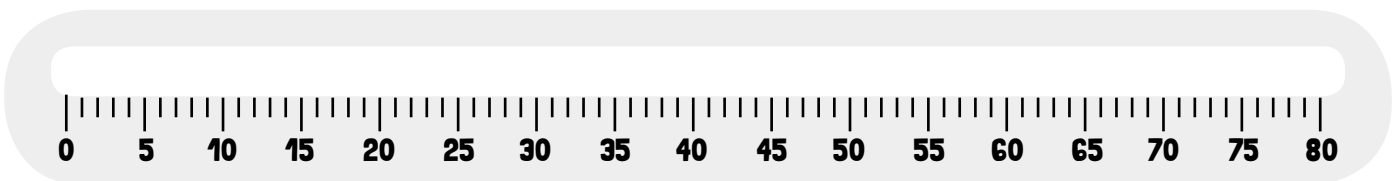


Then count up 14 spaces to find the answer.

$62 + 14 = 76$ The temperature at noon is 76 degrees Fahrenheit.

.....
Now, you try. Read the problems and use the thermometers to help you solve them. Then, write a number sentence to go with each problem.

- 1** Saturday, the low temperature was 56 degrees F and the high temperature was 16 degrees higher. What was the high temperature on Saturday?



Number sentence

The high temperature on Saturday is

2

One winter day the temperature was 27 degrees F in the morning. The temperature was 14 degrees higher by 4:00 pm. What was the temperature at 4:00 pm?



Number sentence

The temperature this summer was

3

This summer the lowest temperature was 65 degrees F. The highest temperature was 33 degrees higher. What was the highest temperature this summer?



Number sentence

The highest temperature this summer was

4

One spring day, the temperature in the morning was 64 degrees F. In the afternoon the temperature rose 12 degrees. What was the afternoon temperature?



Number sentence

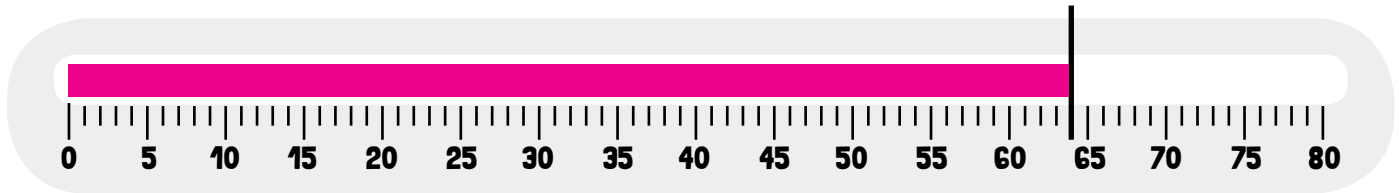
The evening temperature was

USING A THERMOMETER TO SOLVE TEMPERATURE PROBLEMS

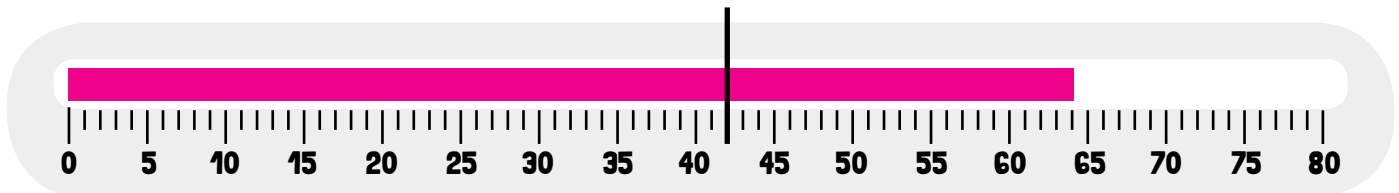
Subtraction

Directions: Use the thermometer to help solve the problems about temperature.

Example: The temperature on a fall afternoon is 64 degrees F. The morning temperature was 22 degrees cooler. What was the temperature in the morning?



To solve this problem start by drawing a line at the 64 degrees mark.

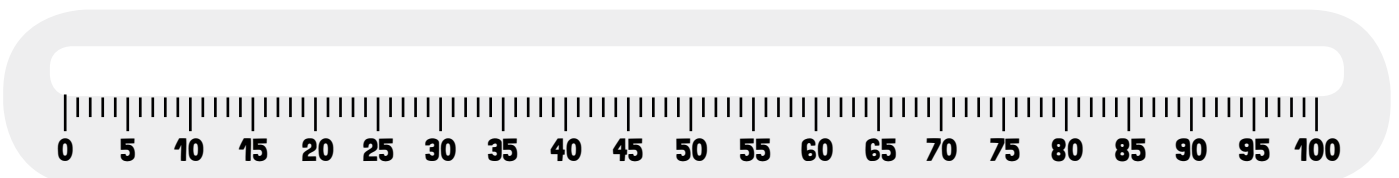


Then count down 22 spaces to get to the answer.

$64 - 22 = 42$ The temperature in the morning was 42 degrees Fahrenheit.

.....
Now, you try. Read the problems and use the thermometers to help you solve them. Then, write a number sentence to go with each problem.

- 1** In September, the highest temperature was 68 degrees F and the lowest temperature was 29 degrees cooler. What was the lowest temperature in September?



Number sentence

The lowest temperature in September was

2

One summer day the high temperature was 92 degrees F. By the evening it had cooled down 15 degrees. What was the temperature in the evening?



Number sentence

The evening temperature was

3

Zelda checked the temperature at lunchtime and it was 74 degrees F. She checked the temperature again at dinner and it was 13 degrees cooler. What was the temperature at dinner time?



Number sentence

The temperature at dinner time was

USING A THERMOMETER TO SOLVE TEMPERATURE PROBLEMS

Mixed Review

Directions: Use a thermometer to solve these problems. Make sure to pay attention to whether the temperature is increasing or decreasing.

- 1** Herb checked the temperature at 3:00 pm and it was 83 degrees F. By 6:00 pm the temperature had fallen 8 degrees. What was the temperature at 6:00 pm?



Number sentence

The temperature at 6:00pm was

- 2** Darlene started swimming at 9:00 am and the temperature was 76 degrees F. By the time she left the pool at noon, the temperature had risen 9 degrees. What was the temperature at noon?



Number sentence

The temperature at noon was

3

Miss Kat's class checked the temperature during morning meeting. It was 54 degrees F. They checked the temperature again at the end of the school day and it had risen 15 degrees. What was the temperature at the end of the school day?



Number sentence

The temperature at the end of the school day was

4

Bobby got on an airplane in Florida where the temperature was 85 degrees F. The plane took him to Colorado. When he got off the plane it was 26 degrees cooler than it was in Florida.



Number sentence

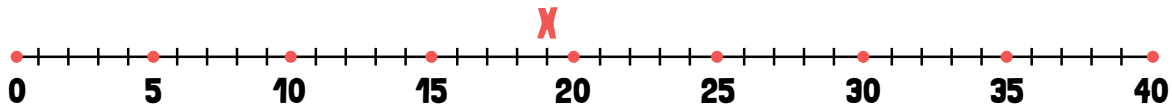
The temperature in Colorado was

FINDING THE MISSING NUMBER IN A NUMBER SENTENCE

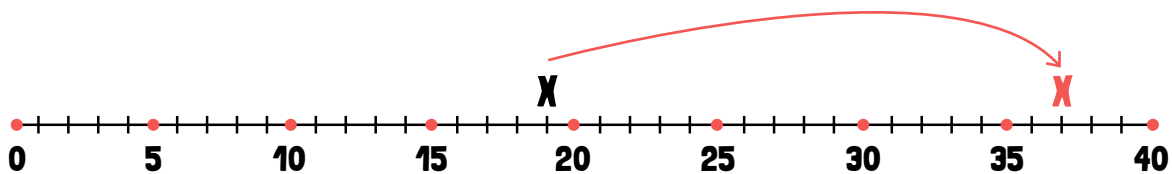
Addition

Imagine you are given a problem that looks like this: $19\text{cm} + \underline{\quad} \text{cm} = 37 \text{cm}$. How can you figure out what number to place in the number sentence to make it true?

One way to solve this problem is to use a number line.



Start by finding the number 19 on the number line. Then, start at 19 and count by ones until you reach 37 on the number line.



Whatever number you said when you reached the 37 on the number line is the correct answer. That number should have been 18. So $19\text{cm} + 18\text{cm} = 37\text{cm}$.

Now, you try. Use the number lines to help you solve for the missing numbers in these equations.

1 $21 y + \underline{\quad} y = 40 y$



2 $39 \text{ ft} + \underline{\quad} \text{ ft} = 50 \text{ ft}$



3 $17 \text{ in} + \underline{\quad} \text{ in} = 33 \text{ in}$

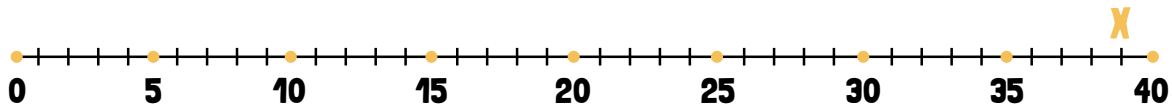


FINDING THE MISSING NUMBER IN A NUMBER SENTENCE

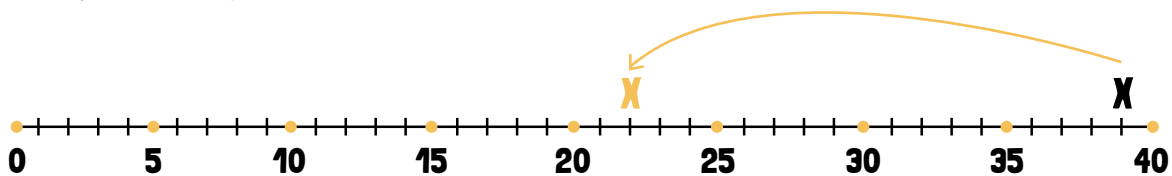
Subtraction

Imagine you are given a problem that looks like this: $39 \text{ cm} - \underline{\quad} \text{ cm} = 17 \text{ cm}$. How can you figure out what number to place in the number sentence to make it true?

One way to solve this problem is to use a number line.



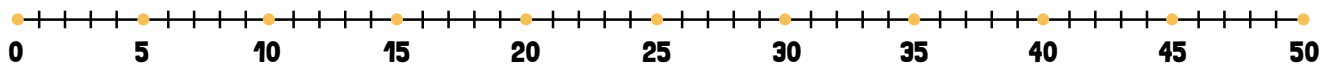
Start by finding the number 39 on the number line. Then, start at 39 and count backwards on the number line by ones 17 spaces.



Whatever number you land on after counting backward 17 spaces is the correct answer. That number should have been 22. So, $39 \text{ cm} - 22 \text{ cm} = 17 \text{ cm}$.

Now, you try. Use the number lines to help you solve for the missing numbers in these equations.

1 $39 \text{ y} - \underline{\quad} \text{ y} = 8 \text{ y}$



2 $46 \text{ ft} - \underline{\quad} \text{ ft} = 12 \text{ ft}$



3 $35 \text{ in} - \underline{\quad} \text{ in} = 16 \text{ in}$

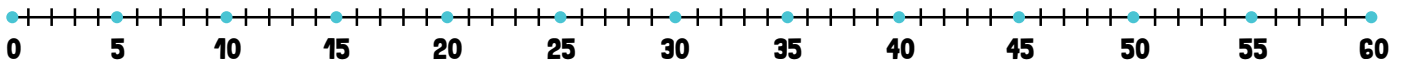


FINDING THE MISSING NUMBER IN A NUMBER SENTENCE

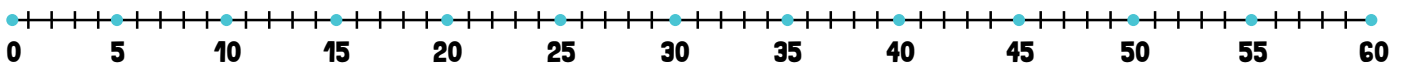
Mixed Review

Directions: Use the number lines to help you solve for the missing numbers in these equations.

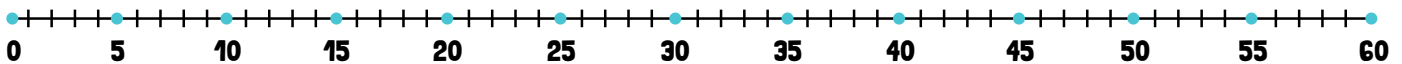
1 $40\text{ y} - \underline{\hspace{2cm}}\text{ y} = 19\text{ y}$



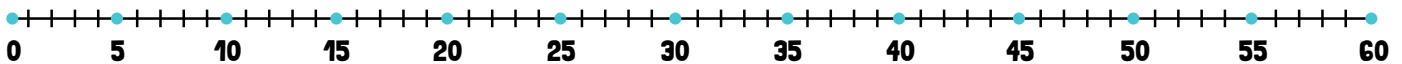
2 $42\text{ ft} + \underline{\hspace{2cm}}\text{ ft} = 60\text{ ft}$



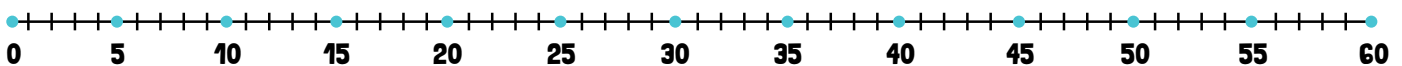
3 $33\text{ cm} - \underline{\hspace{2cm}}\text{ cm} = 59\text{ cm}$



4 $39\text{ in} - \underline{\hspace{2cm}}\text{ in} = 10\text{ in}$



5 $38\text{ km} + \underline{\hspace{2cm}}\text{ km} = 59\text{ km}$



Great job!

is an Education.com math superstar

