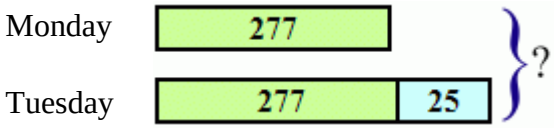
Word Problems and Bar Models

Bar models help you see how the numbers in a problem relate to each other. Whenever you get stumped by a word problem, try drawing a bar model.

On Monday, Dad drove 277 miles, and on Tuesday he drove 25 miles more than he did on Monday. How many miles did he drive in the two days?

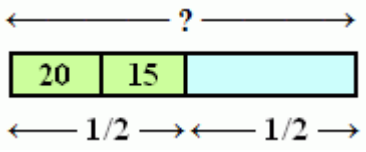
On Tuesday he drove 277 + 25 = 302 miles.
Altogether he drove 277 + 302 = 579 miles.



The bracket "}" means addition or the total of the two bars. We do not know the total or the sum of the two days' journey, so it is marked with a question mark.

After driving 20 miles, Dad says, "I still have 15 more miles to go to the half-way point." How long is the trip?

20 mi + 15 mi = 35 miles, and that is the first half of the trip. So, the total trip is 2 × 35 = 70 miles.



We do not know the total length, so it is marked with "?".

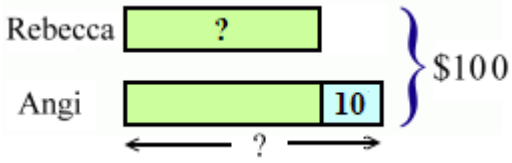
Mark the numbers given in the problem in the diagram. Mark what is asked with "?". Then solve the problem.

1. Jake worked for 56 days on a farm, and Ed worked for 14 days less. How many days did Ed work?

2. Of his paycheck, Dad paid $250 on taxes, and spent $660 on other bills and purchases. Then, half of his paycheck was gone. How much was his paycheck?

3. Dad bought two hammers. One cost $18 and the other cost $28 more. What was his total bill?

Angi and Rebecca split a $100 paycheck so that Angi got $10 more than Rebecca.
How much did each one get?



The bar diagram shows the situation. Angi got $10 more than Rebecca, and together they earned $100.

To solve it, you can think this way. If you took away (subtracted) the "additional" $10, then the total would be $90, and we would only have the two equal parts (the two green parts). So, $90 ÷ 2 = $45 gives us the amount Rebecca got, and then Angi got $45 + $10 = $55.

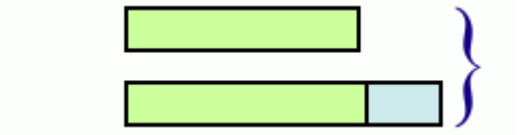
Here's another way of looking at the same situation.

We draw just one bar for the paycheck, and divide it into two halves in the middle (the dashed line). Then we draw half of the $10, or $5, on either side of that middle line.

We can then see Angi got $50 + $5 = $55 and Rebecca got $50 − $5 = $45.

Mark the numbers given in the problem in the diagram. Mark what is asked with "?". Then solve the problem.

4. Mary and Luisa bought a $46 gift together.
Mary spent $6 more on it than Luisa.
How many dollars did each spend?



5. Henry bought two circular saws. One saw was $100 cheaper than the other.
His total bill was $590. What did each saw cost?

6. Eric and Angela did yard work together. They earned $80 and split it so that Eric got $12 more than Angela. How much did each one get?
Draw a bar diagram.