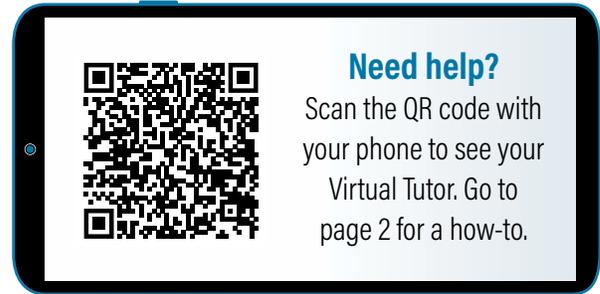


Solving Problems with Whole Numbers



Connections

In this lesson, you will learn about problem solving and see the steps used to solve problems. This lesson will show you ways to make problem solving more understandable.



Why Should You Learn It?



Curtis says:

You know what makes math useful? You can use it! You can apply it in life and use it to solve problems. When I first took math, I remember thinking that the problems weren't realistic. When would I need to figure out how many apples Jane has? Then, I realized math applies to all kinds of things I do every day. Grocery shopping? You've got to add up costs. Building a shelf? Maybe you need to divide up a two-by-four. I learned how to read and really think about problems...to analyze them and make a plan. Then you can find the solution. It opened my eyes. I use math all the time. It made me appreciate it more.

In this lesson, you'll learn steps to solve problems. These steps are really helpful, especially when you read a problem and don't know where to begin.



CONNECTIONS



Basic Problem Solving

When you're solving a problem, it helps to have steps you can follow to find the solution. You can use these steps: Analyze, Plan, and Solve.

Analyze

Analyzing the problem means reading it carefully. Figure out what you need to find. Pick out important numbers, words, or phrases that will help you solve the problem.

Plan

To make a plan, you can use a diagram, table, or list. Try to see how you want to solve the problem.

Solve

Now you're ready to solve. Put your plan into action. Make all the calculations carefully, and check your work. Then, write out your answer.

Analyze, Plan, Solve

In life, you need to multiply numbers all the time. For example, what if you own a business and want to order 15 desks for your employees? If each desk costs \$249, how much will all of the desks cost?

You've got the numbers **15** and **249**. Your task is to find out **how much all 15 desks will cost**.

Making a plan is the next step. You could add 249 to itself 15 times. Since multiplication is repeated addition, it's easier to multiply 15 and 249.

Now it's time to solve. Write the numbers vertically and then multiply. When you do, you get 3,735. This means that the total cost for all 15 desks would be \$3,735.



$$\begin{array}{r}
 24 \\
 249 \\
 \times 15 \\
 \hline
 1245 \\
 249 \\
 \hline
 3735
 \end{array}$$

Try It: Basic Problem Solving

Justin's motorcycle is valued at \$2,350 and his car is valued at \$12,315. How much more is his car worth than his motorcycle?

A
\$9,965

B
\$14,665

C
\$10,045

D
\$11,355

Go to page 118 to see the answer.

Real World Problems

Here's another example problem. This one takes more than one step to solve. Problems in real life often take more than one step.

DJ is on the basketball team at the community college. At last night's game, DJ scored eleven 2-point baskets, and four 3-point baskets. How many total points did he score?



Analyze

The problem asks you to find out how many points DJ scored at the game. There's some important information: eleven 2-point baskets and four 3-point baskets. The numbers for this problem are 11, 2, 4, and 3.

Plan

To plan, a table can help. You can put the points for each kind of basket in the first column. In the next column, you can write how many of those baskets that DJ made.

2 points	11
3 points	4

What math do you need to do? You can multiply to figure out how many points he earned from the 2-point baskets and how many points he earned from the 3-point baskets. Then, you can add to find the total.

Solve

To solve, multiply across each row. That gives how many points DJ earned for the 2-point and 3-point baskets.

$$2 \times 11 = 22$$

$$3 \times 4 = 12$$

The words "in all" mean a total, which means you need to add. So DJ scored 34 points.

$$22 + 12 = 34$$

Try It: Real World Problems

Forty-one people were riding bus number 527. At 8:45 AM, it arrived at the 109th Street stop. There, 19 people got off and then 20 people boarded.

How many riders were on the bus when it traveled to the next stop?

A
22

B
42

C
40

D
39

Go to page 118 to see the answer.



Check Your Skills



Need help?
Scan the QR code with your phone to see your Virtual Tutor. Go to page 2 for a how-to.

1. The distance from Los Angeles to Tucson is 712 km. The flight distance from Tucson to Philadelphia is 458 km more than 4 times that distance. What is the flight distance from Tucson to Philadelphia?

A
1,174 km

B
2,544 km

C
3,002 km

D
3,306 km

2. Erika made \$196 at her yard sale before lunch. She spent \$19 of it on pizza to share with her friend for lunch. After lunch, she made an additional \$76. How much of her yard sale earnings did she have at the end of the day?

A
\$253

B
\$195

C
\$259

D
\$139

3. Girard drove from his apartment to his mother's house. First, he drove 43 miles and then stopped for gas. Next, he drove an average speed of 65 mph for 4 hours until he reached his mother's house. How many miles did he drive in all?

A
432 miles

B
112 miles

C
303 miles

D
335 miles

Use this table to answer questions 4 and 5.

Size	Number of Tablets	Cost
Regular	175	\$5
Large	250	\$7

4. A pharmacy sells bottles of antacid as shown in the table. Last month, they sold \$280 of the regular size. How many regular size bottles were sold last month?

A
40

B
56

C
50

D
112

5. A pharmacy sells bottles of antacid as shown in the table. What is the total number of tablets in 12 regular and 4 large size bottles?

A
3,100

B
441

C
6,800

D
4,000

6. On Friday the Fred's Fish Market sold 12 pounds of shrimp. On Saturday they sold 16 times that amount. On Sunday they sold 19 pounds of shrimp. How many pounds of shrimp were sold over these 3 days?

A
51

B
211

C
204

D
223

7. A manufacturer produces 440 liters of corn syrup. It is poured in equal amounts into 8 empty containers. Each container can hold up to 100 liters. How much volume is left over in each container after the syrup is poured?

A
40 L

B
50 L

C
45 L

D
55 L

8. How many minutes are in a week?

A
1,440

B
7,080

C
10,080

D
25,200

Go to page 118 to see the answers.