

# Section 1.R.4 Problem Solving with Whole Numbers

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## Solving Word Problems

### Basic Strategy for Solving Word Problems

1. READ: \_\_\_\_\_
2. SET UP: Draw any type of figure or diagram that might be helpful and \_\_\_\_\_  
\_\_\_\_\_
3. SOLVE: \_\_\_\_\_
4. CHECK: Check your work and \_\_\_\_\_

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### **Example 1** Application: Adding Whole Numbers

Mary Ann is finalizing her spring break plans. First, she plans to visit her grandma, who lives 288 miles away. Then she plans to drive 145 miles to the beach and spend a couple days with her boyfriend before driving 203 miles home. How many total miles will Mary Ann drive on her spring break road trip?

**Solution**

## Exercises

Solve.

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1. Amy is at an arcade and wins 3483 tickets. She spends 2975 of the tickets on prizes from the redemption area. How many tickets does Amy have left?
2. Tommy and Liz invited 250 people to their wedding. So far, 186 people have returned their RSVP. How many people have not sent in their RSVP?
3. Kyle is reading a book that has 978 pages. He has read 382 pages so far. How many pages does Kyle need to read to finish the book?
4. A secretary is making an inventory of office supplies. She finds 12 full boxes of blue pens which have 25 pens in each box. How many pens will she indicate on the inventory?

## Problem Solving: Consumer Applications

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### ▣ Example 5 Application: Balancing a Checking Account

In January, Kathleen opened a checking account and deposited \$2500. During the month, she made another deposit of \$800 and made debit card purchases of \$132, \$425, \$196, and \$350. What was the balance in her account at the end of the month?

### Solution

## Exercises

Solve.

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5. Shawna is refurbishing her living room. She buys a sofa and loveseat set for \$1549, a coffee table for \$245, an end table for \$99, and a rug for \$479. How much did she pay for all of the items to redecorate her living room?
  
6. Dennis is filling out tax forms and needs to total his charitable donations. During the year, he donated \$234 to Goodwill, \$345 to the Red Cross, and \$260 to Child's Play. What is the total amount of donations that Dennis will report on his taxes?
  
7. Sean has a part-time job as a data entry clerk. He earns \$11 per hour and works for 22 hours each week. How much money does Sean make per week?
  
8. Claire took out a 6 month loan for \$2700 to cover car repairs. If she makes equal monthly payments, how much will she pay towards the loan each month?

## Problem Solving: Geometric Applications

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### ▣ Example 6    Application: Finding the Area of Rectangles

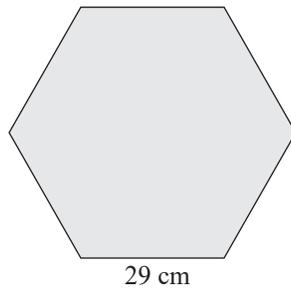
A rectangular picture is mounted in a rectangular frame. If the size of picture (inside the frame) is 14 inches by 20 inches and the frame is 16 inches by 22 inches, what is the area of the frame?

**Solution**

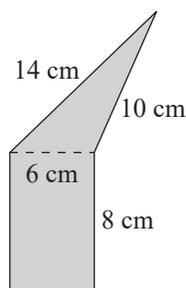
## Exercises

Solve.

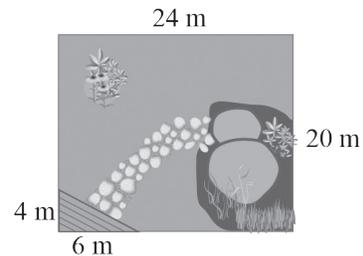
9. A regular hexagon is a six-sided figure with all six sides equal and all six angles equal. Find the perimeter of a regular hexagon with one side of 29 centimeters.



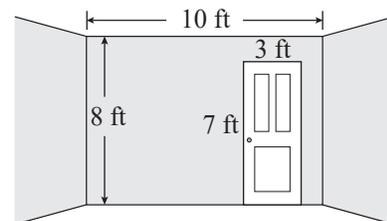
10. A scalene triangle (no sides equal) is placed on one side of a rectangle. The three sides of the triangle are 6 centimeters, 10 centimeters, and 14 centimeters, and the rectangle has a width of 6 centimeters and a length of 8 centimeters. Find the perimeter of the figure.



11. Paul's yard is in the shape of a rectangle that is 20 meters wide and 24 meters long. In one corner of his yard, Paul has a triangular area that is covered by a wooden deck. This triangular area is 4 meters wide and 6 meters long. The rest of the yard is grass and flower gardens.



- a. What is the area of Paul's wooden deck?
- a. What is the area of the yard that is covered in grass and flower gardens?
12. One wall of a room is 8 feet by 10 feet and a rectangular door 3 feet by 7 feet is to be cut in the wall. The remainder of the wall is to be wallpapered. There are three other walls in the room that are 8 feet by 10 feet and these are also to be wallpapered. What is the total area that is to be wallpapered?



## Problem Solving: Average

To Find the Average of a Set of Numbers

1. Find the \_\_\_\_\_
2. Divide this sum by the \_\_\_\_\_

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### ▣ Example 10 Application: Calculating an Average

On an English exam, two students scored 95, five scored 86, one scored 82, one scored 78, and six scored 75. What was the average score for the class?

**Solution**

## Exercises

Solve.

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13. In one month (30 days), an airline pilot spent the following number of hours in preparation for and flying each of 12 flights: 6, 8, 9, 6, 7, 7, 7, 5, 6, 6, 6, and 11 hours. What was the average amount of time the pilot spent per flight?
  
14. Over one week, a hospital had the following number of patients in the ICU (intensive care unit) each day: 22, 19, 23, 19, 17, 21, 19. What was the average number of patients in the ICU each day during the week?
  
15. Bill wanted to compare car insurance rates to find out the average amount he should pay for car insurance. If he looked at four different companies and the monthly rates were \$164, \$107, \$131, and \$98, what is the average monthly rate of car insurance?
  
16. A salesman sold items from his sales list for \$972, \$834, \$1005, \$1050, and \$799. What was the average price per item?