

Challenge: Skills and Applications

For use with pages 160–165

For Exercises 1–5, use the following information. Check your answer with a table.

Two grocery stores sell rice in bulk. The first charges \$0.55 per pound. The second charges \$0.75 per pound for up to 3 pounds and \$0.40 per pound for anything over 3 pounds.

1. Write expressions for the cost of rice at each store in terms of the number of pounds bought, assuming you buy more than 3 pounds.
2. Write and solve an equation that relates the two expressions from Exercise 1.
3. Interpret your result from Exercise 2.
4. Evaluate each expression from Exercise 1 for the value of x from Exercise 2. Interpret the result.
5. Describe what happens for values of x less than the one found in Exercise 2 and for values greater than it.

In Exercises 6–9, you will create your own word problem and then represent the situation three ways.

6. Write a word problem for which drawing a diagram would help the reader to understand the relationships.
7. Draw a diagram to visualize the problem you wrote in Exercise 6.
8. Use your diagram from Exercise 7 to write a verbal model for the situation.
9. Use the verbal model from Exercise 8 to write an algebraic model.