

CHAPTER 6 EXTRA RESOURCES

Additional Resources

1. Read Methods (<http://tiny.cc/readmethods/>): Dig into the reference documentation about the different Read() methods that accept user input in Small Basic.
2. “Silly Shakespeare Program” (<http://tiny.cc/shakespeare/>): Share your silly text output from Listing 6-7.
3. Small Basic Storytime (<http://tiny.cc/storytime/>): Share your original Mad Libs–style story games (see the exercise in Try It Out 6-2).
4. “Counting Garage Sale Money” (<http://tiny.cc/countingmoney/>): Share your program from the third exercise in the Chapter 6 Programming Challenges about Ed’s daughter, Eve (it’s a true story).

Review Questions

1. List the two methods you use to get information from the keyboard. What is the difference between these two methods?
2. What flashes to show that the computer is waiting for the user to type something on the keyboard?
3. The `Read()` method does not return until you press which key?
4. What kind of message tells the user what to input?
5. Explain what happens when a statement like the following is used in a program:

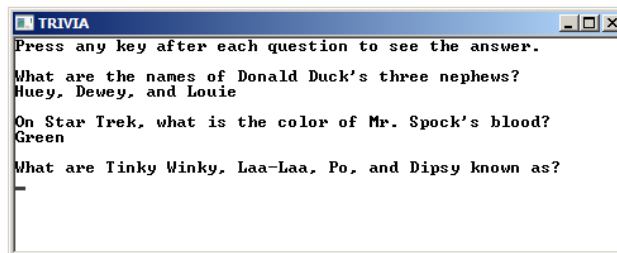
```
ans = TextWindow.ReadNumber()
```

6. What's wrong with the following program? Fix it and try it out!

```
TextWindow.Write("What is your name? ")
ans = TextWindow.ReadNumber()
TextWindow.WriteLine("You are very gentle " + ans)
```

Practice Exercises

1. Write a program that implements a trivia quiz. The program displays a question and then waits for the user to press any key before it shows the answer. Here's a sample run of the program:



2. Have you ever wondered what the Tooth Fairy does with all the baby teeth she finds? For the purpose of this exercise, let's say she sells them and donates all the money to charity. We'll assume she wants to sell a million teeth. You'll need to ask the fairy how much she wants to sell each tooth for (in cents), and how many cents per tooth she intends to donate. Write a program that computes the total sales amount, the donation amount, and the fairy's profit (all rounded to the nearest dollar). But wait! The fairy needs to pay her taxes like everyone else! Have

your program take 20% tax from the fairy, and then show her net profit after taxes. Here's a sample run of the program:

Tooth price (in cents) : 8
Donation cents per tooth : 6

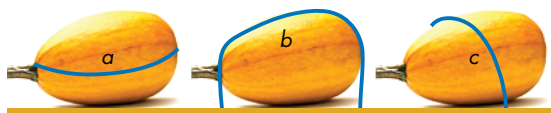
Total sales : \$80000
Donation : \$60000
Profit : \$20000
Taxes (20%) : \$4000
Net profit : \$16000

3. A goat, a horse, and a cow entered a farmer's field and ate some of his wheat. The horse ate twice as much as the goat, and the cow ate three times as much as the horse. The farmer asked the animals' owner to pay \$10 for each bushel of wheat her animals ate. Write a program that asks the farmer how many bushels of wheat the goat ate, and then displays how much the animals' owner will pay the farmer for the wheat eaten by all three animals (rounded to the nearest dollar). Here's a sample run of the program:

How many bushels did the goat eat? 2.5

The goat ate : 2.5 bushels
The horse ate: 5.0 bushels
The cow ate : 15.0 bushels
Total bushels: 22.5
Amount to pay: \$225

4. Scientists believe that the heaviest dinosaur was Argentinosaurus, which weighed about 110 tons. How many pounds is that? Write a program that asks the user to enter a weight in tons, converts that weight to pounds, and displays the result. (Hint: a ton is 2,000 pounds.)
5. Giant pumpkins are very difficult to weigh directly on a scale. To estimate the weight of a giant pumpkin, you can find the circumference measure (a), the end-to-end measure (b), and the perpendicular measure (c) as shown here. You can then approximate the weight W (in pounds) using the formula $W = 1.9 \times (a + b + c)$. In this exercise, you'll write your own pumpkin weight estimator. Ask the user to enter lengths a , b , and c in inches. Then compute and display the estimated pumpkin's weight to the user.



6. How much does it cost to carpet a rectangular room? Write a program that asks the user to enter the length and width of a room (in yards) and the carpet price per square yard. Then show the user the total cost of the carpet. (Hint: $\text{Area} = \text{Length} \times \text{Width}$)
7. Aquaman wants to buy new fish for his aquarium. An angelfish costs \$6, a tetra costs \$4, and a swordtail costs \$3. Write a program that prompts Aquaman, the Emperor of the Sea, to enter how many fish he needs to buy from each type. Then display his total cost.
8. Suppose you could save a million pennies and stack them on top of each other; how tall would that stack be? Would it reach the top of the Empire State Building or Mount Everest? Write a program that prompts the user to enter the height of a building or a mountain (in meters), computes how many pennies you'd need to stack in order to reach that height, and displays your answer. Assume a penny is 0.0598 inches in thickness.
9. You were hired to write a program for AutoPro, a car repair shop in your town. Write a program that prompts the shop's manager to enter the cost of the parts used to repair a car and how many hours it took to repair it (such as 2.5). The shop charges \$50 for each hour of labor. Display a customer's receipt with a breakdown of the payment.
10. You and your friends plan to go to a dance party this Saturday night. There's a fee to reserve a private table at the party and an entrance fee per person. You also plan to take some snacks with you. Write a program that prompts you to enter (1) the number of people in your group, (2) the table reservation fee, (3) the entrance fee per person, and (4) the total cost of snacks. Then divide the total cost by the number of people in your group and display the results to show your friends what each person's share is.