2 TAKS PREPARATION

TAKS Obj. 10
TEKS 8.14. A-C

REVIEWING PROBLEM SOLVING

Many math problems require the ability to decide what action needs to be taken, recognize appropriate answers, and explain conclusions using mathematical language. Some problems may ask you to:

- identify the calculation that solves the problem
- determine the next step in the solution process
- justify your answer using mathematical properties
- select an answer that is reasonable given the constraints of the problem

EXAMPLE

A store usually earns between \$500 and \$700 each weekday and between \$700 and \$1,000 each day on the weekends. Which of the following is the most reasonable estimate for the amount of money the store will earn in a full week?

(A) \$2,500 (B) \$3,200 (C) \$4,500 (D) \$5,700

Solution

STEP 1 **Write** a verbal model that you can use to estimate the amount of money the store earns in a full week.

There are 5 weekdays and 2 weekend days in a week, so:

Amount in a week = 5 × Amount per day on weekdays + 2 × Amount per day on weekends

STEP 2 **Calculate** the least amount the store can earn in a week by using the lowest earnings for each day.

$$\text{Amount in a week} = 5 \times 500 + 2 \times 700$$
$$= 2500 + 1400 = 3900$$

STEP 3 **Calculate** the greatest amount of money the store can earn in a week by using the greatest earnings for each day.

$$\text{Amount in a week} = 5 \times 700 + 2 \times 1000$$
$$= 3500 + 2000 = 5500$$

The store can expect to earn between \$3,900 and \$5,500 in a week. Therefore, a reasonable estimate for the amount that the store will earn in a week will be between \$3,900 and \$5,500.

▶ Because \$4,500 is between \$3,900 and \$5,500, the most reasonable estimate is C.