

WORKSHOP 27

Estimation: Clustering

13. School supplies costing \$6.95, \$7.25, \$7.45, \$6.65, and \$6.79.

7 7 7 7 7

$$5(7) = \boxed{\$35}$$

$$\$35.09$$

20. Juan Perez had the following long-distance phone charges: \$6.15, \$2.15, \$5.98, \$1.81, \$5.87, \$1.89, and \$11.71. Estimate first, then calculate the total long-distance charges.

6

2 6 2 6 2 12

$$\$36 \quad \$35.56$$

WORKSHOP 30

Identifying Information

Reading the Problem Carefully Before you begin to solve an application problem, a word problem, or a story problem, first read the problem carefully and answer these questions:

- What are you asked to find?
- What facts are given?
- Are enough facts given? Do you need more information than the problem provides?

Some problems provide more information than is needed to solve the problem. Others cannot be solved without additional information. Identifying what is wanted, what is given, and what is needed allows you to organize the information and plan your solution.

EXAMPLE 1

Laneshia James earns \$27.25 per hour. She is married and claims 2 withholding allowances. Last week she worked 40 hours at the regular rate and 4 hours at the weekend rate. She is 28 years old. Find her gross pay last week.

• gross pay?

• \$27.25 per hour

• 40 hr (reg) + 4 hr (week)

• 28

• married → 2 allowances

• No; need the weekend rate

EXAMPLE 2

John Skaggs runs 6 miles every day. How many miles does Skaggs run in a week?

- mi in a week?
- 6 mi per day
- 7 days per week
- Yes; $6 \cdot 7 = 42$ mi per week

Complete the problem. Check your answer in the back of the book.

1. Tonia Walsh bought a new car with a \$2,000 down payment and monthly payments of \$274.50. How much did Walsh pay, in total, for her new car?

- total for car?
- paid \$2000 down
- \$274.50 per months
- No; need # of months

Identify the wanted, given, and needed information. If enough information is given, solve the problem.

4. Manuel Munoz paid \$84 each way to fly round-trip from Detroit to Pittsburgh. Bob Tucker paid \$139 for the round-trip fare. Who paid more? How much more?

- paid more? How much?

- $MM = 84 + 84 = \$168$

- $BT = \$139$

- Yes; $MM > BT$; $168 - 139 = \$29$

7. Adam Larson paid for 2 watermelons with a \$10 bill. He received \$2.10 in change. What did the watermelons cost per pound?

- cost per pound?

- 2 watermelons

- paid \$10

- change = \$2.10

- No; weight

WORKSHOP 32

Using Estimation

Complete the problems. Check your answers in the back of the book.

1. Tom Lucas estimated the cost of 10 gallons of gas at \$3.93 a gallon to be \$393. Is his estimate reasonable? If not, what error did he make?

$$10 \cdot 3.93 = 39.30$$

No; mult. by 100 instead of 10

2. Harold Roberts needs 36 inches of frame moulding that costs \$5.99 a foot. Harold estimated that the moulding would cost \$216. (a) Is his answer reasonable? (b) If not, what error did he make?

$$\frac{36 \text{ in}}{12 \text{ in}} = \frac{36}{12} = 3 \text{ ft} \quad 3 \cdot 6 = 18$$

No; needs to convert

Determine the reasonableness of the estimate. If it is not reasonable, state what error was made.

	Problem	Estimate	Reasonable	Error (if any)
3.	20% of \$496.98	\$ 100	a. <i>Yes</i>	b.
4.	5 gallons of gas at \$4.29 per gallon	200	a. <i>No</i>	b. <i> </i>

$$\rightarrow 0.20 \cdot \$496.98 = \$99.40$$

$$\rightarrow 5 \cdot 4 = 20$$

