

Lesson A

Problem Solving Skills: Methods of Payments

Use after Lesson 2-5

When making large purchases, you can usually choose from a number of ways to pay for the item. You can **use equations** to help you make an informed decision about how to pay for items you need and want.

Problem Solving Strategies

- Guess and check
- Look for a pattern
- Solve a simpler problem
- Make a table, chart or list
- Use a picture, diagram or model
- Act it out
- Work backwards
- Eliminate possibilities
- ✓ Use an equation or formula

PROBLEM

Victor wants to buy a new television that costs \$300. He has already saved \$80 for the purchase. He checks his budget and determines that he can save \$20 each week for the television. The sales associate at the store tells him that he can put the \$80 down and pay only \$40 each month for 6 months.

- How long will it take for Victor to save enough money to pay cash for the television?
- How much will Victor pay for the television if he uses the store credit program?
- How much more will it cost Victor to use the credit program?
- If Victor wants to pay for the television in the shortest amount of time, which method of payment should he use?
- If Victor wants the television immediately, which method of payment should he use?

Solve the Problem

- Write an equation to determine how long it will take Victor to save for the television. Let w represent the number of weeks.

$$\begin{array}{ccccccc} \text{Amount already saved} & + & \text{amount saved each week} & \times & \text{the number of weeks} & = & \text{the cost.} \\ \$80 & + & \$20 & \times & w & = & \$300 \end{array}$$

$$80 + 20w = 300$$

$$80 + 20w + (-80) = 300 + (-80) \quad \text{Add } -80 \text{ to each side.}$$

$$20w = 220$$

$$\frac{1}{20}(20w) = \frac{1}{20}(220) \quad \text{Multiply each side by } \frac{1}{20}.$$

$$w = 11$$

It will take Victor 11 weeks to save for the television.

- If Victor uses the store credit, he will pay $\$80 + \40×6 or \$320.
- Victor will pay $\$320 - \300 or \$20 extra if he pays using the store credit.
- Since 11 weeks is less than 6 months, Victor will pay for the television in a shorter amount of time if he saves for the TV.
- If Victor wants the television immediately, he should use the store credit.

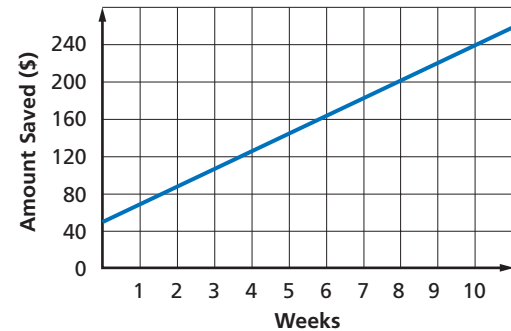
TRY THESE EXERCISES

Cheyenne saved \$65 and plans to save \$15 each week. How long will it take Cheyenne to save each of the following amounts?

- \$335
- \$260
- \$395
- \$170
- INSTALLMENTS** A computer package costs \$700. Miguel can purchase the package by paying zero down and \$35 per month for 24 months. How much more will Miguel pay if he buys the package on time?

PRACTICE EXERCISES

- SAVINGS** Diana has \$55 and saves \$20 each week from her baby-sitting fees. The graph at the right shows how much she will have saved each week. Use the graph to determine how long it will take Diana to save \$235 for a class trip.



- MEMBERSHIPS** The Best Gym prices are given at the right.

- How much would you save by purchasing a one-year membership rather than pay one month at a time?
- How much would you save by purchasing a six-month membership rather than pay one month at a time?

Best Gym

One-month membership	\$30
Three-month membership	\$80
Six-month membership	\$150
One-year membership	\$275

- ALTERNATIVES** Scott can purchase a washer/dryer laundry center combination for \$750. He has saved \$200 for the laundry center and can save an additional \$40 each month. He can also purchase it on time by placing \$200 down and paying \$35.40 each month for 24 months. Each month he does not have a washer and dryer of his own, he spends \$25 at the Laundromat. How should he pay for the laundry center so that he spends the least amount of money?

- SHIPPING** Rebecca wants to order a cell phone holder for \$9.95 and a purse for \$24.98 from a catalog. Use the shipping and handling charges at the right to determine the total cost of the items.

Shipping and Handling Charges

Up to \$20.00	\$5.95
\$20.01 to \$30.00	\$6.95
\$30.01 to \$40.00	\$8.95
\$40.01 to \$50.00	\$9.95

- SUBSCRIPTIONS** A weekly magazine costs \$35 for a one-year subscription and \$60 for a two-year subscription. How much would you save by paying for a two-year subscription instead of 2 one-year subscriptions?

- SHIPPING** Leah wants to order a jacket for \$67.50, a pair of boots for \$39.50, a scarf for \$18 and a pair of gloves for \$15 from a catalog. Use the shipping and handling charges at the right to determine the total cost of the items.

Shipping and Handling Charges

Up to \$25.00	\$3.95
\$25.01 to \$50.00	\$5.95
\$50.01 to \$75.00	\$7.95
\$75.01 to \$125.00	\$9.95
\$125.01 and over	\$11.95

- INSTALLMENTS** Mitchell wants to buy a stereo system that costs \$400 for his car. He can pay \$50 down and \$20 per month for 24 months. How much more will Mitchell pay for the stereo system if he buys it on time?

- WRITING MATH** Describe the advantages and disadvantages of buying on time.