

# 9.4

## Obtain a Vehicle

### Student Text Pages

482–488

### Suggested Timing

80–160 min

### Tools

- classified advertisements in a newspaper
- used vehicle magazines
- telephone
- telephone book
- TVM Solver

### Related Resources

- BLM 9-7 Section 9.4 Obtain a Vehicle
- BLM 9-8 Section 9.4 Achievement Check Rubric
- BLM A-9 Communication General Scoring Rubric

### Link to Prerequisite Skills

Ensure students have completed all the Prerequisite Skills questions before proceeding with this section.

#### Warm-Up

1. Without using a calculator, determine the PST charged on each amount.  
a) \$100      c) \$10 000  
b) \$1000     d) \$30 000
2. Find  $i$ , the interest rate per compounding period, and,  $n$ , the number of compounding periods over the life of the investment, for an investment that earns 6% compounded monthly for 5 years.
3. Estimate the quotient  $20\,000 \div 12$ .

#### Warm-Up Answers

1. a) \$8                      b) \$80                      c) \$800                      d) \$2400
2.  $i = 0.05$ ,  $n = 60$
3. 1650

### Teaching Suggestions

#### Warm-Up

- Write the Warm-Up questions on the board or on an overhead. Have students complete the questions independently. Then, discuss the solutions as a class.

#### Section Opener

- Read the introduction aloud. As a class, discuss some of the advantages and disadvantages of a new car versus a used car.

#### Investigate

- It may not be feasible to contact car dealerships and ask the questions listed. Students can search for available vehicles online and in newspaper and magazine advertisements and think about what questions they would ask the vendor. The questions listed may be thought of as examples or as the beginning of a short brainstorming session about what questions should be asked.

### Investigate Answers (page 482)

Answers may vary. Sample answers:

1. The Honda Civic Coupe with 2 doors, manual transmission, air conditioning, and audio jack costs \$17 180.00 plus \$2161.06 for accessories and \$1275.00 for freight and PDI. Including taxes, the total cost is \$23 502.31. I plan to pay \$1500 down and finance the rest at 3.9% per year, compounded monthly for 48 months. My monthly car payment will be \$551.32.
2. A certified 2-door Honda Civic LX with automatic transmission and air conditioning costs \$15 595 (firm). The mileage on the vehicle is 29 000 km.

### Examples

- Have students work through the Examples as a class before proceeding to the Discuss the Concepts. Alternatively, have students complete the Examples independently or in small groups before reviewing them as a class.
- Explain that the method used in Example 1 is the same method a bank employee uses to calculate monthly loan payments.
- Students may wish to discuss leasing, what it is, and who benefits from leasing. They may wish to compare this to the advantages and disadvantages of purchasing a vehicle.

### Key Concepts

- Emphasize to students that a vehicle is an expense—it loses value over time. It is *not* an asset.
- The only exception to this is the purchase of a classic car, e.g., a 1967 Mustang. This is an asset; however, it is not a “vehicle” in the everyday sense. It is likely a hobby, a showpiece, or an investment.

### Discuss the Concepts

- Give students time to talk about their answers to these questions before discussing them as a class.

### Discuss the Concepts Suggested Answers (page 485)

- D1.** Most of the students I spoke with who own vehicles purchased a used vehicle with some financial help from their parents.
- D2.** Buying a car is not an investment because a car loses value.
- D3.** The cost of maintenance, repairs, and gasoline would be less for a motorcycle than for a car.

### Practise (A)

- Encourage students to refer to the Examples before asking for assistance.
- You may wish to have students work in pairs or small groups to complete the Practise questions.
- For **question 2**, encourage students to record the display of the TVM Solver screen.

### Apply (B)

- **Question 8** is a Literacy Connect. Literacy Connect questions offer the opportunity to explore literacy issues within the context of mathematics. You may wish to have vehicle trader magazines available to assist with this question. Students who do not have experience with vehicles may have difficulty with this question.

### Common Errors

- When calculating the total amount of interest paid over the course of a loan, some students may neglect to subtract the original price of the vehicle.
- R, Remind students that in return for the payments, the purchaser receives something of value — the vehicle. This value must be subtracted from the total paid to the vendor.

### Accommodations

- Spatial**—provide a photocopy of a worked example for determining total vehicle cost
- Language**—assist students to ensure they complete all parts of the Chapter Problem. Provide a reading buddy.
- Memory**—continue to build cue card set

- Question 10** links to the Chapter Problem. Remind students to keep the solution to this question handy as it may help them with the Chapter Problem Wrap-Up. Alternatively, you may wish to use this problem as a formative assessment now, or use all the parts as a summative assessment at the end of the chapter.
- Question 12** is an Achievement Check question. It can be used as a diagnostic or formative assessment, or assigned as a small summative assessment piece. You may wish to use **BLM 9-8 Section 9.4 Achievement Check Rubric** to assist you in assessing your students.

### Extend (C)

- Assign the Extend questions to students who are not being challenged by the Apply questions.

#### Achievement Check Answers (page 488)

- 12. a)** \$6913.50  
**b)** \$576.13  
**c)** Answers may vary. Sample answer: The band should consider the cost to insure the van and the cost of fuel. They should also set money aside for repairs and maintenance on the van.

### Literacy Connections

- Encourage students to record the abbreviations listed in **question 8** and their meanings. Then, have students search advertisements for other abbreviations and their meanings.

### Mathematical Process Expectations

| Process Expectation                          | Questions        |
|--|------------------|
| Problem Solving                              | 9, 10, 12        |
| Reasoning and Proving                        | 7, 10, 13        |
| Reflecting                                   | 7, 10, 12        |
| Selecting Tools and Computational Strategies | 1–6, 9–12, 14    |
| Connecting                                   | 7–10, 12, 13, 14 |
| Representing                                 | 10               |
| Communicating                                | 7–10, 12         |

### Ongoing Assessment

- Assess students' ability to communicate mathematically, and to justify their thinking. You may wish to use **BLM A-9 Communication General Scoring Rubric** to assist you in assessing your students.

### Extra Practice

- You may wish to use **BLM 9-7 Section 9.4 Obtain a Vehicle** for remediation or extra practice.