Name: _____ Date: _____

BLM 9–9

Section 9.5 Operate a Vehicle

1. Define the terms *fixed cost* and *variable cost*. Give three examples of each.

2. Each insurance policy can be paid annually or monthly. In each case, which option costs more for one year? How much more?

a) Drake's insurance costs $3800 per year or $342 per month.
b) Kelly's insurance costs $2450 per year or $233 per month.
c) Cho's insurance costs $1975 per year or $178.50 per month.
d) Chandra's insurance costs $2510 per year or $217.90 per month.

3. Jocelyn's compact car has a fuel efficiency rating of 13.8 L/100 km. The capacity of the gas tank is 60 L.

a) How far can Jocelyn travel on one tank of fuel?
b) Jocelyn is planning to visit her parents, 74 km away. How much gas will she need to drive to her parent's house and back?
c) Gas costs 102.9¢/L. How much will Jocelyn's trip cost?
d) At 102.9¢/L, how far could Jocelyn travel on $25 of gas?

4. A compact car has a 35-L gas tank and a fuel efficiency rating of 8.1 L/100 km. A minivan has a 70 L tank and a fuel efficiency rating of 12.9 L/100 km. Which vehicle can travel further on a tank of gas? How much further?

5. Ricardo purchased a new vehicle for $32 500. It is expected to depreciate at a rate of 23% per year.

a) Find the value of the vehicle at the end of the first and second years.
b) Determine the depreciation after two years, as a percentage of the new vehicle price.

6. Last year, Ali purchased a new car for $38 457. It is now worth $27 958.24. What is the rate of depreciation on Ali's car?

7. One day, the price of gas in Buffalo, New York was $2.86/gal. In Fort Erie, Ontario, gas cost 101.9¢/L. One US gallon is equal to 3.785 L. In which city was gas less expensive? How much less?

8. The capacity of the gas tank on Jorge's car is 75 L. The price of gas in Orlando, Florida is $3.14/gal. How much would it cost Jorge to fill his tank?

9. The fuel efficiency of Matthew's car is 14.5 L/100 km and of Natalie's car is 7.25 km/L. Which car is more fuel efficient? Explain.

10. Stacey paid $43 995 for a new vehicle. It is expected to depreciate 10% in the first year. After that, the rate of depreciation increases by 2% per year.

a) Find the value of the car at the end of each year for 10 years.
b) Graph the relation.
c) Is the relationship between the year and the value of the vehicle linear? Explain.