SECTION 9-5 Operating and Maintaining a Vehicle

Many costs are involved in operating and maintaining a vehicle. Variable costs increase the more you drive, while fixed costs remain about the same no matter how many miles you drive.

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\text{Cost per Mile} = \frac{\text{Annual Variable Cost} + \text{Annual Fixed Cost}}{\text{Number of Miles Driven}}
\]

1. Tom Larson had fixed costs totaling $2,805.60 last year. His variable costs totaled $1,870.40. Larson drove his vehicle 16,700 miles last year. What was his cost per mile?

2. Jamila Simmons drove 9,910 miles last year. Her fixed costs totaled $1,754.07 last year. Her variable costs totaled $584.69. What was her cost per mile to the nearest tenth of a cent?

3. John and Evelyn each own a vehicle of the same model. John drove a total of 27,612 miles, while Evelyn drove 9,821 miles. Both had fixed costs totaling $2,357.04. John’s variable cost totaled $4,822.03, and Evelyn’s totaled $589.26.
   a. How much money did John spend to operate and maintain his vehicle on a cost-per-mile basis?
   b. How much did Evelyn spend per mile?

4. Luisa Diaz drove her vehicle about 7,200 miles last year. Her fixed costs totaled $1,058.40 and her variable costs were $1,965.60. How much did it cost per mile for Luisa to operate her vehicle?

5. Jim Spring maintained this record of vehicle expenses for last year: gas, $845.96; oil, lube, miscellaneous, $68.85; insurance, $418.50; and license, $35. He drove 8,280 miles last year.
   a. What were his total variable costs?
   b. What were his total fixed costs?
   c. What were his total costs?
   d. What was his cost per mile to the nearest tenth of a cent?

6. Last year, Ishiho Novato drove 21,986 miles and had these expenses: gas, $1,187.25; maintenance and miscellaneous, $118.80; parking and tolls, $125; tires, $300; wash and wax, $75; insurance, $614.80; license, $34.90; and depreciation, $1,780. What was his cost per mile last year?

7. Reka Maharis drove her vehicle to and from work last year. Her records show a total of $1,560 for fixed costs and $3,740 for variable costs. If it cost her $0.36 per mile to drive, how many miles did she drive last year?

8. You drove your vehicle to and from work last year. Your records show a total of $1,860 for fixed costs and $5,000 for variable costs. If it cost you $0.40 per mile to drive, how many miles did you drive last year?