Operating a Vehicle

The largest cost of a vehicle is the purchase, however the entire time you own a vehicle you will continue to pay additional payments. When owning a vehicle you must be prepared to spend money that you will never see a return on.

**OPERATING EXPENSES**

**Fixed Cost:** An expense that remains the same from one month to the next.

**Variable Cost:** An expense that varies in amount or frequency

List the fixed and variable costs related to owning and operating a vehicle.

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<tr>
<th>Fixed Costs</th>
<th>Variable Costs</th>
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<tbody>
<tr>
<td>• Car payments</td>
<td>• Tires (all season vs dedicated winter/summer tires)</td>
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<tr>
<td>• Insurance Payments</td>
<td>• Repairs / maintenance costs</td>
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<tr>
<td>• Regular maintenance (all changes/service)</td>
<td>• Car washes</td>
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<td></td>
<td>• Gasoline Costs</td>
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**INSURING A VEHICLE**

**Deductible:** A portion of the claim that is not covered by the insurance company

Ralf is 19 and single, and he owns a seven year-old mid-sized car. He called several insurance agents and the lowest quote he received was $2620/year. There are two payment options: he can pay the insurance premium in full once a year, or he can make monthly instalments of $230.

a) Calculate the annual cost if he chooses the monthly instalments.

\[ \$ 230 \times 12 = \$ 2760 \]

b) Calculate the difference between the two payment methods.

\[ \$ 2760 - 2620 = \$ 140 \]

c) Suggest reasons why Ralf might choose each option.

\[ \$ 2620 - cheaper \quad \$ 2760 - so\ you\ don’t\ need\ the\ hypothesis\ - spread\ out. \]
CALCULATING FUEL COSTS

Fuel efficiency: a measure of how far a vehicle travels per unit of fuel. Common units of fuel efficiency are, in Canada, Litres per 100 km (L/100km) and in U.S. miles per gallon (mpg).

DeVaughs truck has a 76-L fuel tank and a fuel efficiency rating of 11.8 L/100 km.

a) Explain what the fuel efficiency rating on DeVaughs truck means.

Under normal driving conditions, the truck will use approximately 11.8 L of fuel to travel a distance of 100 km. If a vehicle uses less fuel to travel 100 km, it is more fuel efficient.

b) How far can DeVaughs truck travel on one tank of fuel?

\[
\frac{11.8 \text{ L}}{100 \text{ km}} = \frac{76 \text{ L}}{x}\quad \Rightarrow \quad x = \frac{76(100)}{11.8} = 644.1 \text{ km}
\]

c) How much fuel would his truck use on a 450 km trip?

\[
\frac{11.8}{100} = \frac{x}{450}\quad \Rightarrow \quad x = \frac{11.8(450)}{100} = 53.1 \text{ L}
\]

d) Explain how to determine the cost of the fuel for the trip in part c).

\[53.1 \times 1.23 = \$65.31\]