Before we begin, are there any questions from last day's work?

(9.4_9.5 Vehicle Costs: Depreciation)

Today's Learning Goal(s):

By the end of the class, I will be able to:

a) use a proportion to calculate the unknown volume of gas used.
b) calculate the monthly cost of owning a car.

MBF 3CI   (9.4_9.5) Vehicle Costs: Fuel Costs   Date: Jan. 9, 2018

Ex. 1

Mr. Lowe drove 781 km (1 way) to visit his parents. The fuel consumption rate for his van is 8.3 L per 100 km. If gas is sold for $1.17 / L, calculate the total fuel cost for a return trip.

Solution: Let **g** represent the volume of gasoline needed in L. 👈

👈 Let **c** represent the **cost** of gasoline, in dollars

Part 2

① 👈 **Cost ≐ $1.17 x 130** 👈 ②

👈 **≐ $152.10**

$$\left(\frac{L}{km}\right) \quad \frac{8.3}{100} \times \frac{g}{781}$$

$$100g = 8.3(781)$$

$$100g = 6482.3$$

$$g = \frac{6482.3}{100}$$

$$= 64.823 \text{ L}$$

the total fuel cost for the trip is **$152.10**

total gasoline = 2×64.823

$$= 129.646$$

$$\doteq 130 \text{ L}$$

Ans: $152.10

Ex. 2

Karen bought a new car for $15 945 one year ago.

She got a 4 year car loan at prime (3% interest), so her monthly payments are $353.

[FYI: After 4 years, she will have paid $998 in interest, called the "total cost of borrowing"]

Over the year, she drove 11 800 km, and paid an average of $1.22 / L for fuel.

The fuel consumption rate for her car is 6.3 L per 100 km.

a) Calculate her fuel cost for the first year.

Solution: Let **g** represent the gasoline used, in L.

$$\left(\frac{L}{km}\right) \quad \frac{g}{11800} = \frac{6.3}{100}$$

$$100g = 11800(6.3)$$

$$100g = 74340$$

$$g = \frac{74340}{100}$$

$$= 743.4 \ L$$

Cost = $1.22 x 743.4

= 906.948

≐ $906.95

Ans: $906.95

b) Calculate her average monthly car expenses (not including car insurance). (btw: car ins. min. $250/month)

Car expenses ≐ 75.58 + 353 ☞③

≐ $ 428.58

①☞ **Fuel Costs/month ≐ 906.95 ÷ 12** ☞②

☞ ≐ 75.579

☞ ≐ $ 75.58

her average monthly car expenses are: **$ 428.58** ☞

Ans: $428.58

c) If the car depreciates 26% during its first year, what is the value of her car today?

Depreciation = 0.26 x 15 945 ☞④

☞ **= $ 4 145.70**

Value after 1 year = 15 945 - 4 145.70 ☞⑤

☞ **= $11 799.30**

Ans: $11 799.30

(*btw: Consider Buying a used 2-3 year old car instead*)

Entertainment: p. 493#3 (use $1 per 1L of gas), 4, 5

CHALLENGE: p. 495 #14

(and Compound Interest Review sheet #7-10)