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

p. 498 #1–4, 7, 8c

Compound Interest Review Sheet: #1 – 4

Today's Learning Goal(s):

By the end of the class, I will be:

a) ready for the Ch.8_9 Summative

Update #2 on the handout!

From your textbook, complete:

p. 456 #1 – 3, 6

pp. 454-455 #3, 6, 7, 11 (approximate #11)

MBF 3CI COMPOUND INTEREST and PERSONAL FINANCE REVIEW (Day 2)

Date: June 6/17

FORMULAE:

Simple Interest: $I = Prt$ **Future Amount using Compound Interest:** $A = P(1+i)^n$

$A = P + I$ simple

$I = A - P$ comp.

1. Calculate the amount of simple interest earned in 2 years, if you invest $4175, and the annual interest rate is 0.13%/*a*.

I = ?
P = $4175
r = 0.0013
t = 2

$I = Prt$
$= 4175(0.0013)(2)$
$= 10.855$
$\doteq \$10.86$

$10.86

2. Suppose a backpacking trip through Europe for ten weeks will cost $6000. How much do you need to invest today at 7.2%/*a*, compounded quarterly, so that you will have enough in 5 years for your trip?

A = $6000
P = ?
$i = \frac{0.072}{4}$
n = 5 x 4 = 20

$A = P(1+i)^n$
$6000 = P(1+\frac{0.072}{4})^{20}$ ✓
$\frac{6000}{(1+\frac{0.072}{4})^{20}} = P$

$4 199.48

$P \doteq 4199.481$

∴ you need to invest $4199.48

3. At the neighbourhood bank, the interest rate for an investment under $5000 is 6.75%/*a*, compounded monthly.
   a) If $2500 is invested for 2 years, how much will the investment be worth when it matures?
   b) How much of this will be interest earned?

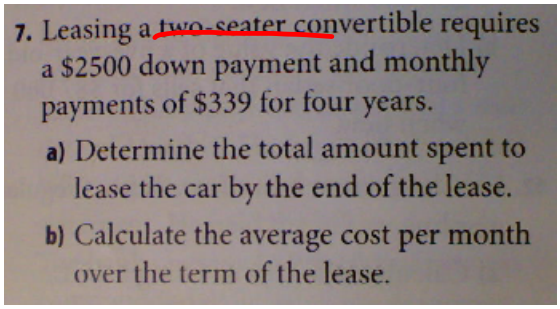
a)
A = ?
P = $2500
$i = \frac{0.0675}{12}$
n = 2 x 12 = 24

$A = 2500(1+\frac{0.0675}{12})^{24}$
$\doteq 2860.259$
$\doteq \$2860.26$

b) formula needed?
$I = A - P$
$\doteq 2860.26 - 2500$
$\doteq \$360.26$

a) $2 860.26 b) $360.26

p.498 #7



7. Leasing a ~~two-seater~~ convertible requires a $2500 down payment and monthly payments of $339 for four years.
   a) Determine the total amount spent to lease the car by the end of the lease.
   b) Calculate the average cost per month over the term of the lease.

7a) Total Cost = 2500 + 12(339)(4)

= 2500 + 16 272

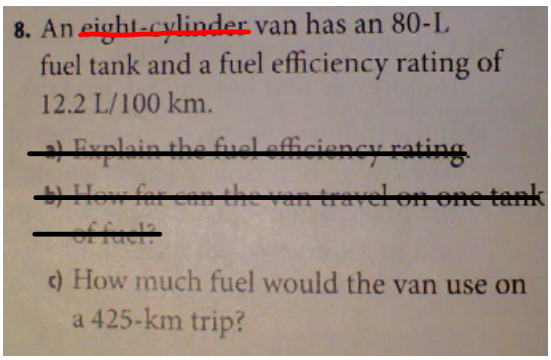
= $18 772

b) Avg. Monthly Cost = $\frac{18772}{(12)(4)}$

$= \frac{18772}{48}$

$\therefore \$391.08$

p.498 #8c



8. An ~~eight-cylinder~~ van has an 80-L fuel tank and a fuel efficiency rating of 12.2 L/100 km.
   ~~a) Explain the fuel efficiency rating.~~
   ~~b) How far can the van travel on one tank of fuel?~~
   c) How much fuel would the van use on a 425-km trip?

Let g represent the volume of fuel in L.

$\left(\frac{L}{km}\right)$ $\frac{g}{425} = \frac{12.2}{100}$

$\frac{12.2}{100} = \frac{g}{425}$

$100g = 12.2(425)$

$g = 425 \times \frac{12.2}{100}$

$= 51.85$ L

$\left(\frac{km}{L}\right)$ $\frac{100}{12.2} = \frac{425}{g}$

$100g = 12.2(425)$