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

Entertainment: p. 493#3 (use $1 per 1L of gas), 4, 5
CHALLENGE: p. 495 #14

## Ch.8&9: COMPOUND INTEREST and PERSONAL FINANCE EXAM REVIEW

1. **TRUE or FALSE?**

   a) _____ A share of stock represents partial ownership in a company.

   b) _____ An example of a bond is a loan that someone gives a company or government in exchange for a pre-chosen rate of interest.

   c) _____ A GIC pays a fixed amount of interest on money for a fixed amount of time.

   d) _____ An RESP is a plan that helps individuals set aside money to be used during retirement from work.

   e) _____ When you invest money, there is never a chance that you lose money.

2. Barry purchased 100 shares of stock from Company MATH at yesterday's closing price of $4.07 per share. Calculate how much money he invested, before broker fees.

3. A new term with its definition:

    Return: the amount of potential interest earned on an investment

    Place the following savings and investment alternatives on the graph below. (Label as **A, B, C**, etc...)

A Stocks	
B Bank Savings Accounts	
C Canada Savings Bonds	
D GICs	
E One-time $6000 bet at a casino on lucky number "7".	

    A B C D E

    Return

    0 ⌞_____→

    Risk
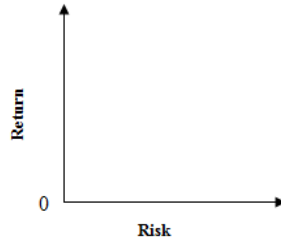
4. Fill-in-the-blank:

    a) A(n) _____ is a professionally managed portfolio made up of stocks, bonds and other investments.

    b) The safest investment guaranteed by the federal government is a(n) _____.

    c) Company profits may be divided among shareholders in the form of _____.

5. Suppose a backpacking trip through Europe for eight weeks will cost $5000.
    How much do you need to invest today at 7.5%/a, compounded semi-annually,
    so that you will have enough in 4 years for your trip?

6. 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?

    $A = ?$

    $P = 2500$

    $i = \dfrac{0.0675}{12}$

    $n = 2 \times 12$
    $= 24$

    a) $A = P(1+i)^n$
    $= 2500\left(1 + \dfrac{0.0675}{12}\right)^{24}$
    $= 2860.259$
    $\doteq \$2860.26$

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

7. A new truck cost $34 900 (not including taxes) last year. Its value has depreciated 17%.
    How much is it worth now?

8. A 2008 Honda Element SUV has a fuel tank capacity of 60 L.
   If fuel costs 134.9 cents per litre, calculate how much it will cost to fill its tank.

$$1.349$$

$$Cost = \$1.349/L \times 60L$$

$$= \$80.94$$

9. The *Canada EnerGuide* fuel consumption rating or "mileage" for a 2008 Honda Element SUV is 8.7 L per 100 km, for highway driving.
   If you take a 450 km trip, and gas costs $1.30 per L, how much money is spent on fuel?

10. A small new car can be purchased for $14 000. Complete the following chart:

Age (Years)	Value After Depreciation (%)	Rate of Depreciation (%) during the year	Value After Depreciation ($)
1		25%	
2		12%	

11. Jocelyn wants to double her money in an investment that gives 5.5% per year.
    How many years will it take her?

12. Use the information from the top of this credit card statement to answer the questions that follow below:

a) If the statement date is September 16, what is the due date for any balance owing on the statement?
b) If the statement shows a balance owing of $452.23, what would be the minimum payment that Michael must make?
c) Interest on outstanding balances is compounded daily.
   Express the annual interest rate as a rate per day, both as a percent and as a decimal.
d) Michael has a balance of $150 and is charged interest 55 days. Calculate the amount of interest owed.
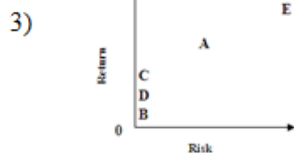
a) Sept. 16 + 21 days grace   b) $452.23

16 17 18 19
↳ Oct. 7

$\times 0.03$
13.566
$13.57

c) 17.6 %/a

= 0.176

daily: $\dfrac{0.176}{365}$

and as %

= 0.000 482 191 78   = 0.048 219 178 %

d) A = ?
P = 150
$i = \dfrac{0.176}{365}$
n = 55

$A = 150\left(1 + \dfrac{0.176}{365}\right)^{55}$

≐ 154.030
≐ $154.03

I = A - P
= 154.03 - 150
= $4.03

FINAL ANSWERS
1) a) T   b) T   c) T   d) F* to make this true, RESP should be replaced with RRSP   e) F
2) $407

3)

4) a) mutual fund   b) Canada Savings Bond   c) dividends
5) see your teacher
6) see your teacher
7) linear (since the FDs are the same). Simple interest grows linearly.
8) exponential (since the ratios are the same). Compound interest grows exponentially.
9) $3 724.48
10) a) $2 860.26   b) $360.26
11) $28 967
12) $80.94
13) $50.90
14) chart:

Age (Years)	Value After Depreciation (%)	Rate of Depreciation (%) during the year	Value After Depreciation ($)
1	75%	25%	$10 500
2	88%	12%	$9 240

15) Using the Rule of 72, it will take her about 13.09 years
16) a) October 8 (Remember, there are 30 days in September) b) $13.57 c) 0.04822 % = 0.0004822   d) $4.03