Questions form practice...

p. 493: #1, 2, 4, 7, 8, 10, 11, 12, 13, 15

2. Determine the unknown values.

	Regular Payment ($)	Interest Rate (%)	Compounding and Payment Frequency	Term (years)	Future Value ($)
a)	100	?	monthly	6	7800.61
b)	?	3.50	semi-annually	7	3927.38
c)	20 000	4.75	quarterly	?	1 080 978.04

N=41.99999981
I%=4.75
PV=0
PMT=-20000
FV=1080978.04
P/Y=4
C/Y=4
PMT:END BEGIN

42 payments / 4 pay/yr = 10.5 years

4. Predict which investment will earn more interest. Explain and then verify your prediction.

F **A.** $5000 invested at 6%, compounded annually, for 5 years

A **B.** $1000 invested every year at 6%, compounded annually, for 5 years

More interest

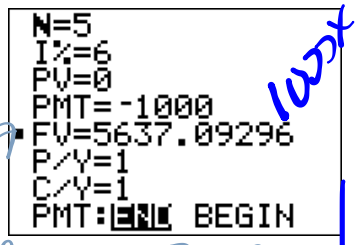
A/ $A = 5000\left(1 + \frac{0.06}{1}\right)^{1\times 5}$

$A = 6691.13$

$I = 6691.13 - 5000$

$I = \$1691.13$

B/



1000 x 5

$A = 5637.09$

$I = 5637.09 - 5000$

$I = \$637.09$

8. Aaron and Casey started investing at the same time. Aaron makes payments of $25 at the end of each month into an investment that earns 4.2%, compounded monthly. Casey made a single payment into an investment that earns 4.2%, compounded annually.

a) At the end of 5 years, what is the future value of Aaron's investment?

b) Casey's investment has the same future value as Aaron's in 5 years. How much principal did Casey invest?

c) Predict whose investment will be worth more at the end of 10 years. Explain and then verify your prediction.

Aaron (APP)

a)

```
N=60
I%=4.2
PV=0
PMT=-25
▪FV=1665.898724
P/Y=12
C/Y=12
PMT:END BEGIN
```

$1665.90

Casey (Formula)

$$P = \frac{A}{\left(1+\frac{r}{n}\right)^{nt}}$$

$$P = \frac{1665.90}{\left(1+\frac{0.042}{1}\right)^{5}}$$

$P = \$1356.16$

c) Aaron - More

```
N=120
I%=4.2
PV=0
PMT=-25
▪FV=3720.328045
P/Y=12
C/Y=12
PMT:END BEGIN
```

Casey

```
1356.16(1+0.042)
^10
      2046.388659
```

APP.

10. How long will it take for \$1000 payments every 6 months to grow to more than \$10 000 if the interest rate is 7.5%, compounded semi-annually?

Payments

I will a year

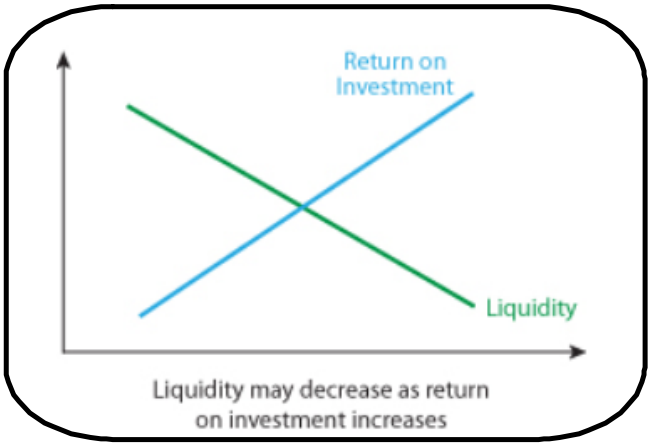
```
▪N=8.650349422
 I%=7.5
 PV=0
 PMT=-1000
 FV=10000
 P/Y=2
 C/Y=2
 PMT:END BEGIN
```

$\frac{8.65}{2} = 4.325$ years

Investment Portfolios

As you learn to analyze investment portfolios, don't forget that an investment portfolio must meet the investor's specific needs. A portfolio that works for one person may not be ideal for another, as each person's requirements will be different. In general, our requirements from an investment fall into these three areas:

- **Liquidity:** How quickly and easily the investment can be turned into cash
- **Return on investment:** The increase in value or the money received from an investment
- **Risk:** The probability that an investment will be lost



Return on Investment

The purpose of investing is to get back more money than you put in. This increased value or additional cash is your **return on investment** (often referred to as **ROI**). The word "return" can mean different things:

- **The amount of money returned on an investment**. For example, if a $1,000 investment increases in value to $1050 in a year, its return in $50. Generally, people identify the time required for that return.
- **The rate at which an investment grows**. A rate always relates to a specific time—investments generally relate to one year unless a different time is specified. When return on investment is given as a **rate of return** (**ROR or investment return**), it is usually written as a per cent that tells how fast an investment grew over a year. For example, the same $1000 investment that grows to $1050 in one year has a rate of return of 5%.

Most high-interest-rate savings accounts are currently paying about 3% interest per year. This means that if you put $1,000 in a savings account today, you will have $1,030 at the end of one year. Your ROI for the year will be $30. Your ROR will be 3%.

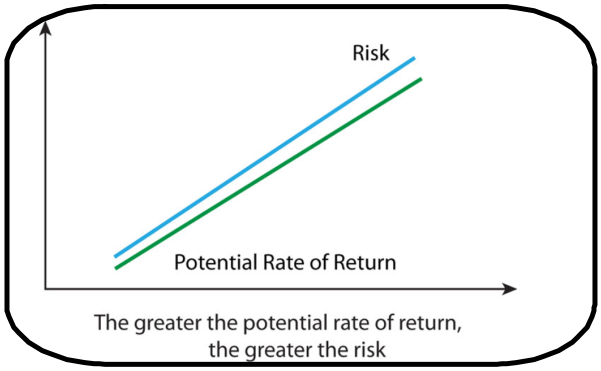
People use ROI to evaluate, or measure, the performance (success) of an investment or to compare the efficiency of a number of different investments.

Risk

Some investments do well, some do not. The probability that an investment will perform poorly is called **risk**.

Some investments—such as bank accounts and Guaranteed Investment Certificates (GICs)—are not risky at all. Their rate of return is guaranteed and predictable. Also, they generally promise a low rate of return.

Some investments—such as shares in a new gold mine—have high risks because the operation being invested in also has a high risk of failure. If the operation fails, investors lose their money. The only way someone will invest in such an operation is for the chance to make a very high return on investment if the operation does well.



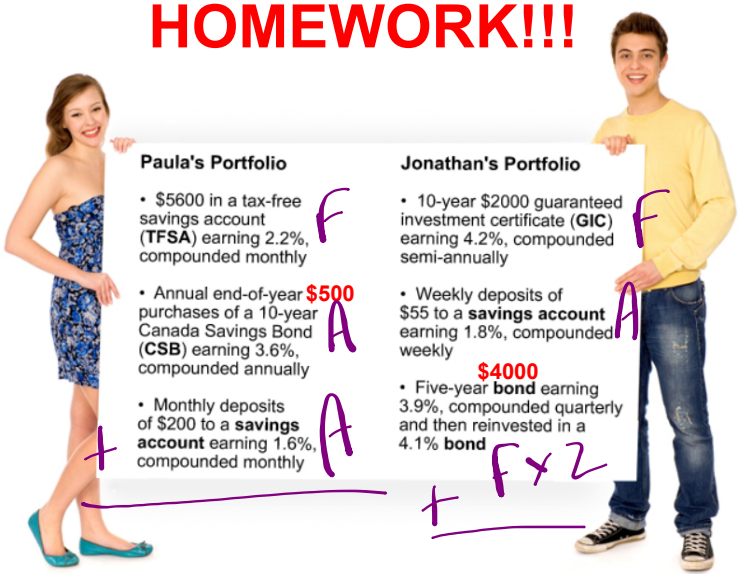
Except for guaranteed investments, most investments have some degree of risk. Understanding how the economy is performing, and checking an investment's past performance can help you estimate the investment's risk level. It is important to remember, though, that **an investment's past performance is not a guarantee of its future performance**. History is filled with people who assumed that history predicts the future. Make sure you find out about the risk involved before you choose an investment. Wise investors diversify their investment portfolios to help manage the risk.

Comparing Investment Portfolios

Investment Portfolio Analysis Question.pdf

Jonathan and Paula are each hoping to buy a house in ten years. They have each chosen an investment portfolio, hoping to save for a large down payment in ten years. Whose portfolio will show the better return?

HOMEWORK!!!



Using the information provided, answer the following questions for each portfolio. *After making an honest effort, click each question to check your work.*

1. How much principal do Paula and Jonathan each invest over the ten years? Include both single payment investments and the total of regular payments.

```
5600+500*10+200*
12*10
          34600
```

Paula

```
2000+55*52*10+40
00
          34600
```

2. What is the future value of each person's portfolio, in ten years? Don't forget that Jonathan reinvests his bond after five years.

3. What rate of return does each person's portfolio have after ten years? Rate of return is the ratio of the amount an investment has increased in value at a given point to the amount invested.

Attachments

Investment Portfolio Analysis Question.pdf