

8.5 Effects of Changing the Conditions on Investments and Loans

A Formulas

Simple Interest	Compound Interest
$A = P(1 + rt)$	$A = P(1 + i)^n$
$P = \frac{A}{1 + rt}$	$P = \frac{A}{(1 + i)^n}$
$I = Prt$	$I = A - P$
	$i = \frac{r}{m} \quad n = m \cdot t$
Calculator	Calculator

where:

P is the *principal* or the *present value*

A is the *amount* or the *future value*

I is the total accumulated *interest*

r is the *interest rate* per year

i is the *interest rate* per compounding period

n is the *total number of compounding periods*

m is the *number of compounding periods* per year

t is the *time* (in years)

Example 1. Nicolas invests \$1000. How long would it take for his investment to double for each type of interest earned?

a) 5%/a simple interest

b) 5%/a compounded semi-annually

Example 2. Margaret can finance the purchase of a \$949.99 refrigerator one of two ways:

Plan A: 10%/a simple interest for 2 years

Plan B: 5%/a compounded quarterly for 2 years

Which plan should she choose? Justify your answer.

Example.3 Suppose you need \$10 000 in five years to repay some college expenses. Compare the amounts you would need to invest in these three options to reach your goal.

A) A bond that pays interest at 7% per year, compounded monthly.

B) An investment fund that pays interest at 8% per year, compounded semi-annually.

C) A term deposit account that pays interest at 6.5% per year, compounded daily.

Reading Pages 446-449

Homework Pages 450-453 # 4, 6, 8, 12, 17