Chapter

8

Financial Mathematics: Investing Money

▶ **LEARNING GOALS**

You will be able to develop your number sense in financial applications by

- Understanding and comparing the effects of simple interest and compound interest
- Determining how changes in the variables of an investment affect the return
- Being aware of a variety of different investment instruments
- Comparing different investment strategies

> ❓ What do you think it means to be financially literate, and how will being financially literate help you achieve your goals?

Tom Hamza: Financial Literacy 101

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8.1 Simple Interest

term

The contracted du... investment or loan.

interest

The amount of money earned on an investment or paid on a loan.

fixed interest rate

An interest rate that is guaranteed not to change during the term of an investment or loan.

principal

The original amount of money invested or loaned.

maturity

The contracted end date of an investment or loan, at the end of the term.

future value

The amount, A, that an investment will be worth after a specified period of time.

GOAL

Solve problems that involve simple interest

simple interest

The amount of interest earned on an investment or paid on a loan based on the original amount (the principal) and the simple interest rate.

Communication | Tip

Interest rates are communicated as a percent for a time period. Since most often the time period is per year or **per annum** (abbreviated as /a), a given percent is assumed to be annual unless otherwise stated. For example, an interest rate of 4% means 4%/a or 4% interest per year.

	Based on the **principal** (original amount) that is invested/borrowed. Interest is a certain percentage per **annum** (year). Often used for personal loans and short-term investments. The length of time for the investment/loan is called the **term**.
SIMPLE *Interest*	

Interest = Principal x rate x time

$$I = Prt$$

&

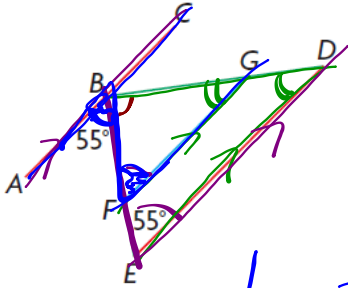$$A = P + I$$

OR

$$A = P + Prt$$

$$A = P(1 + rt)$$

- I - interest earned
- P - principal (original investment/loan)
- r - interest rate as a percent **(change to a decimal)**
- t - is ALWAYS time in **years**

(how long the money is invested/borrowed)

- **A - amount of money including interest**

Thx alex

Review Questions...

6. Given: $\triangle BFG \sim \triangle BED$ ← similar

Prove: **a)** $AC \parallel ED$

  b) $FG \parallel ED$

  c) $AC \parallel FG$

b)

S	J
$\angle BGF = \angle BDE$	Similar
$\therefore FG \parallel ED$	CA

a)

S	J
$\angle ABF = \angle BED$	Given
$\therefore AC \parallel ED$	AIA

c)

S	J
$\angle ABF = 55°$	Given
$\angle BFG = \angle BED$	CA
$\angle BED = 55°$	Given
$\angle ABF = \angle BFG$	Transitive
$\therefore AC \parallel FG$	AIA