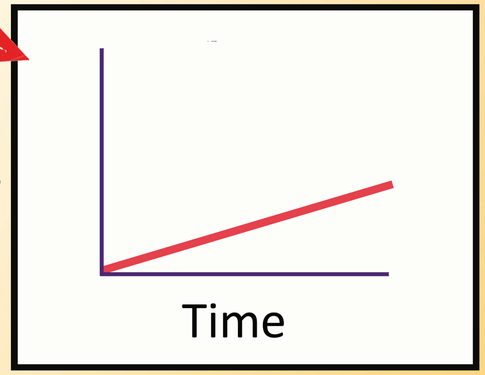
FINANCE AND GROWTH

Basics and Grade 10

Simple Interest

$$A = P(1 + n.i)$$

Linear



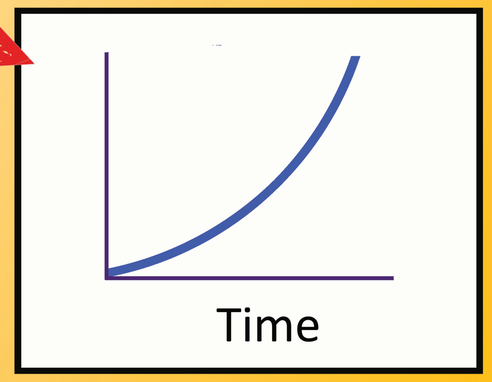
Interest only takes the principal amount into account

Used for Hire Purchase

Compound Interest

$$A = P(1 + i)^n$$

Exponential



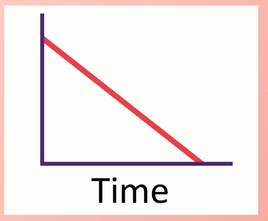
Interest on principal amount as well as other interest earned. Interest on interest

Used for Inflation and population growth

Depreciation

Straight line balance

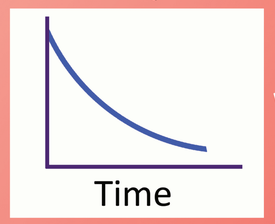
$$A = P(1 - n\,i)$$



will equal zero

Reducing balance

$$A = P(1 - i)^n$$



will never equal zero

Annuities

regular payments

Future value (savings) capital that accumulates

$$F = \frac{x\,[(1+i)^n - 1]}{i}$$

Present value (loans) reducing balance

$$P = \frac{x\,[1 - (1+i)^{-n}]}{i}$$

Grade 11

Nominal Interest

The quoted interest rate

Effective Interest

The actual interest rate due to interest being compounded

$$^{i}eff = \left(1 + \frac{i\,nom}{m}\right)^m - 1$$

[m - number of compounding periods per year]

If compounded annually nominal = effective

If compounded monthly /quarterly etc nominal < effective

Grade 12

Sinking Fund

A savings account created to replace equipment in a business

(Generally a future value annuity)