

# Economics

## 1. 1 Introduction

Engineering economy – comparison of alternatives using time value of money.

Universal engineering symbol - \$

### Trinity of worth elements

P present worth, principal

A amount per period, annuity

F future worth

### Time - rate components

i interest, rate of return

n number of time intervals

### Derived amount

G gradient amount per interest period

### Universal equation

$$P = [P*(1)] + [A*(P/A, i, n)] + [F*(P/F, i, n)]$$

## 1. 2 Triad

Economics, as all physical systems, operates based on the Trinity or Triad Principle which states:

*Any item than can be uniquely identified can be further explained by three components.*

A corollary states:

*Two of the components are similar and project into one plane, while the third component is dissimilar and operates orthogonal.*

## 1. 3 Competing Philosophy

### Zero-sum game

Wealth, W, is physical property, P.

Since physical property is limited, then wealth is divided.

$$W = P$$

### Unlimited created wealth

Wealth, W, is physical property, P, multiplied by technology, T, growth, n.

Since technology is exponential dependent on the imagination, then unlimited wealth is created. Value is added to things previously without value.

$$W = PT^n$$

## **1. 4 Seven Keys for Accomplishment**

### **1.4.1 Reality check**

Technical skills represent less than 15% of your professional work.

People and money skills are the dominant requirement for success.

### **1.4.2 Carnegie's 3 principles for relationships**

1. Do not criticize, condemn, or complain.
2. Give honest and sincere appreciation.
3. Find out what the other person wants and help them get it.  
In the process, you will get what you want.

### **1.4.3 Attitude Triad**

1. Think positively. You can do it.
2. Smile, it shows in your voice.
3. Dress for success.  
Dress for the position you want, not where you are.

### **1.4.4 Perception**

Develop insight from your creator.

### **1.4.5 Formula**

Success = dream + attitude + action

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08/24/98

