# Chapter 13 – 3a Differential Equations; Growth and Decay

**Example 1.** $1,000 is deposited into an interest bearing account. Find the amount in the account after t years if the rate of change of the amount in the account with respect to time is 8% times the amount in the account.

### Exponential Growth Law

If and then

**Example 2.** Find the amount A in an account after t years if

**Example 3.** The marginal price dp/dx at x units of demand per week is proportional to the price p. If there is no weekly demand at a price of $100 per unit and a weekly demand of 5 units at a price of $77.88 per unit, find the price-demand equation. What price corresponds to a demand of 10 units per week?

 per unit