

## Related Rate Problems

### Steps:

- a) Identify the variables and what is given
- b) Differentiate with respect to  $t$  (time) to get the rate of change equation
- c) Plug in the given values
- d) Solve for the unknown

### Examples:

The price-demand equation for DVD players sold is  $p = 0.2x^2 + 2x$  where  $x$  is the demand for DVD players and  $p$  is the price per player. Currently the demand is 150 players per week and is increasing at a rate of 10 players/week. How fast is the price changing at this time?

The price of a product is related to the number of units' available (supply) by the equation  $px + 3p - 16x = 234$  where  $p$  is the price in dollars and  $x$  is the units. Find the rate at which the price is changing if there are 90 units available and the supply is increasing at a rate of 15units/week.