Learning Goal(s): a) solve problems involving exponential equations graphically, including problems arising from real-world context.
b) use graphing technology to find the *x*-value of an exponential function, for a given value of the function.

# 1.4.1: Applications of Exponential Functions

Date: _____

Ex. 1 Suppose you invest $1000 at 8% per year, compounded annually.

The amount, A dollars, of your investment after *n* years is represented by the equation $A = 1000(1.08)^n$.

Using the graph:

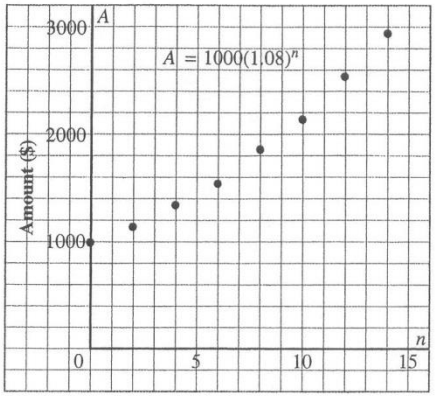
a) Estimate the value of the investment after 5 years.

b) Estimate how many years it takes for the investment to grow to $2500.

c) Describe how both the graph and the equation change in each case.

i) The original investment is greater than, or less than, $1000.

ii) The interest rate is greater than, or less than, 8%.




Ex. 2 Suppose you invest $1000 at 8% per year, compounded *quarterly*.

a) Estimate the value of the investment after 3 years.

b) Estimate how many years it takes for the investment to grow to $2800.

Ex. 3 A tire with a slow puncture loses pressure at the rate of 4%/min. The tire's initial pressure is 300 kPa.

a) What is the tire's pressure after: i) 1 min?
ii) 2 min?
iii) 10 min?

b) Use graphing technology to determine when the tire's pressure will be i) 160 kPa
ii) 120 kPa

**Read pp.326-328**, then complete p.329 #7, 11, 2, 4, 5 Extra practice: p.330 #9, 10