Compound Interest
Exponentials and Logarithms – Aggrandizing rates of change

The equation for compound interest is given as:

$$Pv = Po\ (1+r)^n$$

Pv represents the future value, Po is the amount initially deposited, r represents the rate of interest as a fraction, annually (if not annually, then you divide this number by the number of times you deposit interest annually) and n represents the number of deposits.

Here are examples of a few uses of this equation:

If the initial amount was $14,000 as a deposit and the interest rate was deposited 4 times annually at 14%, then what would be the future value after 12 years?

$$Pv = \$14{,}000\ (1+(.14/4))^{48}$$
.: PV = $72,990.25

A $1,000 deposit is made at a bank that pays 12% compounded **annually**. How much will you have in your account at the end of 10 years?

A $1,000 deposit is made at a bank that pays 19% compounded **monthly**. How much will you have in your account at the end of 10 years?

A $1,000 deposit is made at a bank that pays 13% compounded **weekly**. How much will you have in your account at the end of 5 years?

CHALLENGE: (YOU SHALL NEED TO USE LOGARITHMS TO SOLVE THIS PROBLEM)

A $1,000 investment is made in a trust fund at an annual percentage rate of 12%, compounded monthly. How long will it take the investment to reach $2,000?