Compound interest is where the interest is added to your investment in installments during the year, rather than as one big interest payment at the end of the year. The installments are called compounds. For example, an investment where the interest is compounded monthly has the interest paid in twelve installments each year (one per month).

$$B = P * \left(1 + \frac{I}{n}\right)^{n*t}$$

where : B is the balance of the bank account or value of the investment

P is the principal, i.e. the amount initially invested

I is the nominal interest rate (expressed in decimal form)

n is the number of compounds per year

t is the number of years that the investment has been going for

Usually, it is most efficient to graph the money versus time on the calculator. An equation is :

```
y1 = 100*(1+1.8/N)^(iPart(N*X))
```

(The `iPart` function can be found under the [MATH][NUM] menus.)

This will graph the value of $100 dollars invested at 180% compounded N times per year. Before graphing, you need to tell the calculator what N is. For example, if you want yearly compounding, hit the following keys on your calculator :

```
[1] [2] [STO▷] [ALPHA] [LOG]
```

A good viewing window is :

```
Xmin=0, Xmax=1.01, Xscl=.5, Ymin=95, Ymax=800, Yscl=100
```

- *What happens to the amount of money in the account at the end of one year as N is made larger and larger?*

- *What happens to the appearance of the graph of money versus time as N is made larger and larger?*