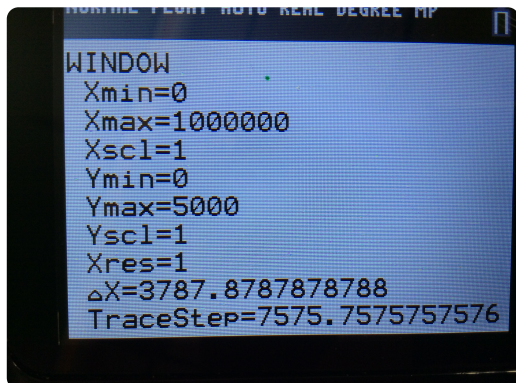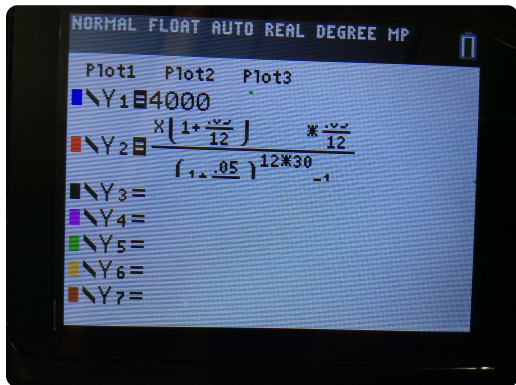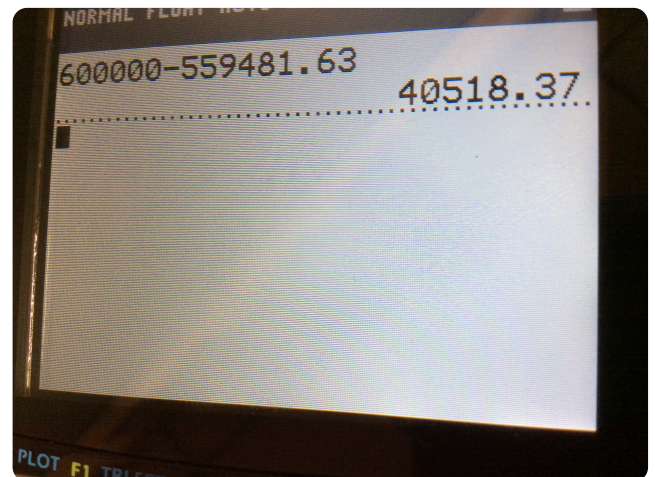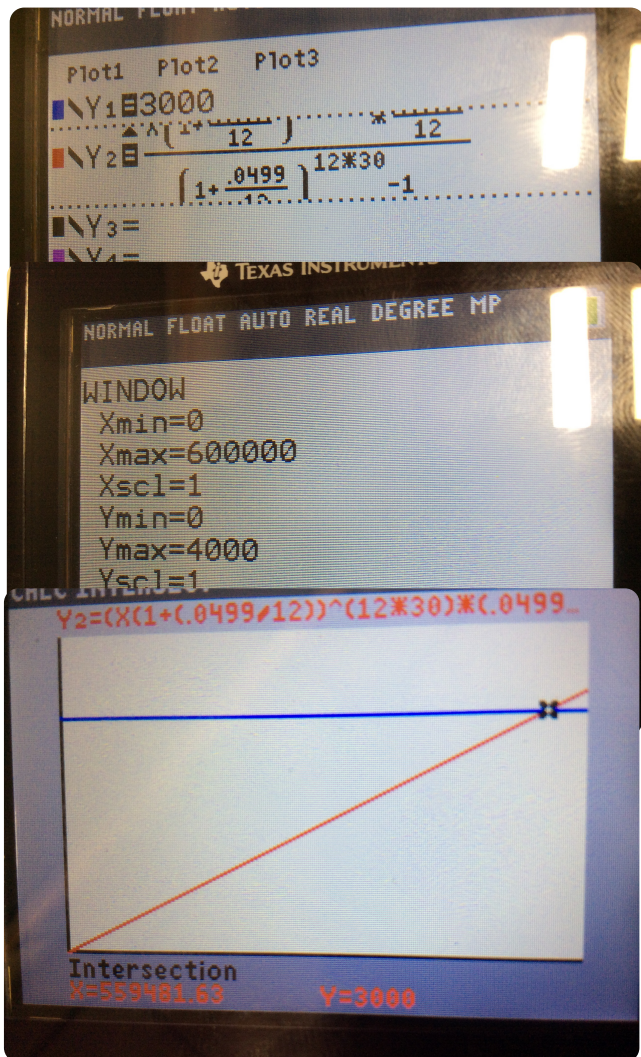1) Suppose you and your spouse can afford mortgage payments of no more than $ 4,000. The bank that is giving you a mortgage offers 30-year mortgages at 5 % interest. How much money can you and your spouse mortgage to buy a home?

NORMAL FLOAT AUTO REAL DEGREE MP

Plot1 Plot2 Plot3

$\blacksquare \setminus Y_1 \blacksquare 4000$

$\blacksquare \setminus Y_2 \blacksquare \dfrac{X\left(1+\frac{.05}{12}\right)\;\ast\frac{.05}{12}}{\left(1+\frac{.05}{12}\right)^{12\ast30}-1}$

$\blacksquare \setminus Y_3 =$

$\blacksquare \setminus Y_4 =$

$\blacksquare \setminus Y_5 =$

$\blacksquare \setminus Y_6 =$

$\blacksquare \setminus Y_7 =$

NORMAL FLOAT AUTO REAL DEGREE MP

CALC INTERSECT

Y₂=(X(1+(.05/12))^(12*30)*(.05/12)...

Intersection
X=745126.47   Y=4000

NORMAL FLOAT AUTO REAL DEGREE MP

WINDOW
 Xmin=0
 Xmax=1000000
 Xscl=1
 Ymin=0
 Ymax=5000
 Yscl=1
 Xres=1
 ΔX=3787.8787878788
 TraceStep=7575.7575757576

2) Your dream home is for sale for $ 600,000. You can afford mortgage payments (not including school taxes) of no more than $ 3,000. By how much does the home need to be decreased so that you can afford the mortgage if a bank is offering you a 30-year mortgage at 4.99 %?

4) You wish to purchase a new Mercedes-Benz. Mercedes-Benz offers financing for 6 years at 4.99 % interest. If you can afford car payments of $ 800 a month, what is the most expensive Mercedes-Benz you can afford?

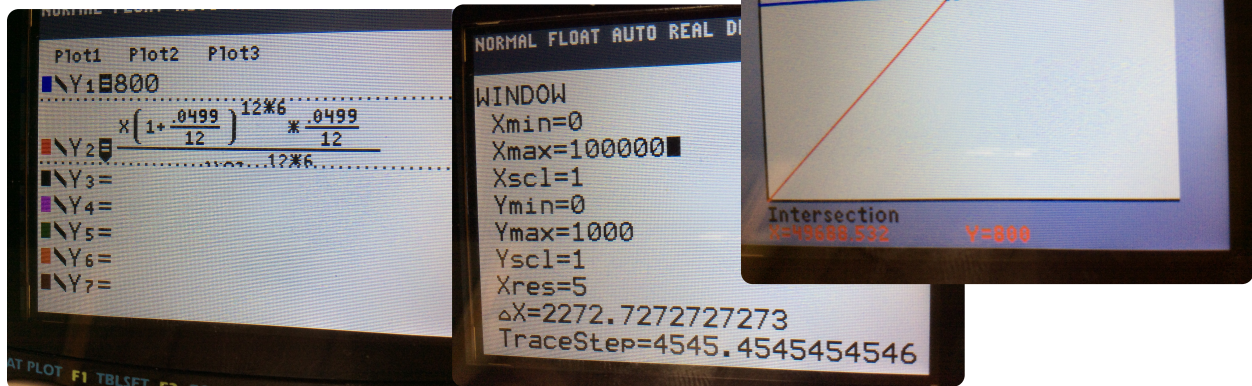Done   Mortgage Formula by John casalinuovo

Mortgage formula

$$\text{Mortgage Payment} = \frac{M \left(1 + \frac{R}{12} \right)^{12Y} \cdot \frac{R}{12}}{\left(1 + \frac{R}{12} \right)^{12Y} - 1}$$

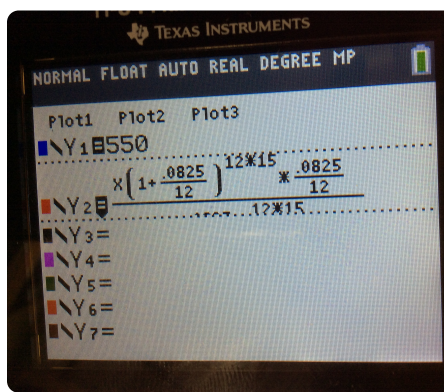M = Mortgage amount (how much you are borrowing)

R = interest rate as a decimal

Y = years of the mortgage (usually 30 for houses)

0:02 ●————————————————— -7:41

Plot1   Plot2   Plot3

Y1 = 800

$$Y_2 = \frac{X \left(1 + \frac{.0499}{12} \right)^{12*6} * \frac{.0499}{12}}{\left(1 + \ldots \right)^{12*6}}$$

Y3 =
Y4 =
Y5 =
Y6 =
Y7 =

AT PLOT   F1   TBLSET   F2

NORMAL FLOAT AUTO REAL DI

WINDOW
 Xmin=0
 Xmax=100000■
 Xscl=1
 Ymin=0
 Ymax=1000
 Yscl=1
 Xres=5
 ΔX=2272.7272727273
 TraceStep=4545.4545454546

LC INTERSECT
Y2=(X(1+(.0499/12))^(12*6)*(.0499/...

Intersection
X=99688.532   Y=800

MORTGAGE PROBLEMS WORKSHEET 10

3) A Winnebago dealership offers 15-year mortgages of their RVs at 8.25 % interest. You can afford to have monthly payments of no more than $ 550. What is the most expensive RV you can purchase under these conditions?

Plot1 Plot2 Plot3

■\Y₁■550

$$\blacksquare \backslash Y_2 = \frac{X\left(1+\frac{.0825}{12}\right)^{12*15}*\frac{.0825}{12}}{}$$

■\Y₃=
■\Y₄=
■\Y₅=
■\Y₆=
■\Y₇=

WINDOW
 Xmin=0
 Xmax=300000
 Xscl=1
 Ymin=0
 Ymax=1000
 Yscl=1
 Xres=5
 ▵X=378.7878787
 TraceStep=757.5

Y₂=(X(1+(.0825/12))^(12*15)*(.0825…

Intersection
X=58882.828   Y=550