

TVM Application for Mortgages

Example: The Lees are finalizing the purchase of their home. They arrange a mortgage of \$175 000 at 6.25% per year compounded semi-annually to be repaid monthly over 25 years. Generate an amortization table.

Solution:

$N = 300 (25 \times 12)$

$I\% = 6.25$

$PV = -175000$

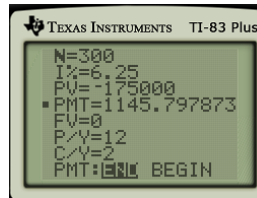
\* $PMT = 0 (1145.80)$

$FV = 0$

$P/Y = 12$

$C/Y = 2$

PMT: END



$\therefore$  Their monthly payment would be \$1145.80.

Find the monthly interest rate.

$$\left(1 + \frac{0.0625}{2}\right)^2 = (1+i)^{12}$$

$$\left(1 + 0.03125\right)^2 = (1+i)^{12} / \frac{1}{12}$$

$$\left[ (1.03125)^2 \right]^{\frac{1}{12}} = \left[ (1+i)^{12} \right]^{\frac{1}{12}}$$

$$(1.03125)^{\frac{2}{12}} = 1+i$$

$$i = 1.03125^{\frac{1}{6}} - 1$$

$$i = 0.005141783$$

Payment number	Monthly payment	Interest paid	Principal paid	Outstanding balance
0				\$175 000
1	\$1145.80	\$899.81	\$245.99	\$174754.01
2	\$1145.80	\$898.55	\$247.25	\$174506.76
3	\$1145.80	\$897.28	\$248.52	\$174258.24
4	\$1145.80			
5	\$1145.80			
6				
7				
8				
9				
10				