

Math 1160 – Section 10.3 Answer Key

2. **\$1,053.22** (outflow of cash)

$$\begin{aligned}N &= 300 \\I\% &= 1 \\PV &= 100000 \\PMT &= ? \\FV &= 0\end{aligned}$$

4. **\$3,644.68** (The total you paid for the car is the sum of the amount borrowed from the bank plus the \$500 cash down payment.)

$$\begin{aligned}N &= 36 \\I\% &= .75 \\PV &= ? \rightarrow 3144.68 \\PMT &= -100 \\FV &= 0\end{aligned}$$

8a. **\$671.36** (outflow of cash)

$$\begin{aligned}N &= 300 \\I\% &= .75 \\PV &= 80000 \\PMT &= ? \\FV &= 0\end{aligned}$$

8b. **\$211,408** ($\671.36×300 payments) + (\$10,000 down payment)

8c. **\$121,408** $\rightarrow \Sigma\text{Int}(1,300)$

8d. **\$14,695.43** $\rightarrow \text{bal}(276)$

8e. **\$7,676.91** $\rightarrow \text{bal}(288)$

8f. **\$1,037.76** $\rightarrow \Sigma\text{Int}(277,288)$

16. *Calculate the loan statistics first.

$$\begin{aligned}N &= 300 \\I\% &= .5 \\PV &= 50000 \\PMT &= ? \rightarrow -322.15 \\FV &= 0\end{aligned}$$

*Next calculate the balance on the loan at the time you sell the house.

Bal(120) = \$38,175.99 (This is what you still owe the bank.)

*To calculate the money you have left, subtract the balance of your loan (what you owe the bank) from the amount of money you received for the house.

$$\$150,000 - \$38,175.99 = \mathbf{\$111,824.01}$$
 (selling price – balance on mortgage)

20a. Monthly Payment: **\$10,532.24**

$$N = 300$$

$$I\% = 1$$

$$PV = 1000000$$

$$PMT = ? \rightarrow -10532.24$$

$$FV = 0$$

20b. New Monthly Payment: **\$13,723.46**

Find the balance of the first loan \rightarrow bal(60) = \$956,532.02

This is the amount borrowed (PV) for the 10-year loan

$$N = 120$$

$$I\% = 1$$

$$PV = 956532.02$$

$$PMT = ? \rightarrow -13723.46$$

$$FV = 0$$

20c. bal(60) = **\$616,938.47**

30a. Monthly Payment: **\$26,000 / 60 months = \$433.33**

30b. Monthly Payment: **\$456.68 for 60 months**

$$N = 60$$

$$I\% = .75$$

$$PV = 22000$$

$$PMT = ? \rightarrow -456.68$$

$$FV = 0.$$

30c. **Option A is better.**

32. Balance after 1 year \rightarrow **\$17,204.08**

Balance after 3 years \rightarrow **\$11,011.40**

Balance after 5 years \rightarrow **\$3,921.39**

$N =$ *Enter the year number here*

$$I\% = 7$$

$$PV = 20000$$

$$PMT = -4195.92$$

$FV =$ *Recalculate the loan balance(what you still owe the bank)*

In how many years will the loan be paid off? \rightarrow **6 years** (make $FV = 0$, solve for N)