MAT 100, Quiz #9, Summer 2017   Name _____ **KEY** _____

Instructions: Show all work. Use exact answers unless otherwise directed to round.

1. You deposit $200 each month into an account earning 3% interest compounded monthly.
   a. How much will you have in the account in 30 years?

   $N=360$ $PV=0$ $P/y=12$ $FV= 116,547.38$
   $I=3\%$ $PMT=200$ $C/y=12$

   b. How much total money will you put into the account?

   $200 \times 360 = \$72,000$

   c. How much total interest will you earn?

   $116,547.38 - 72,000 = \$44,547.38$

2. You can afford a $700 per month mortgage payment. You've found a 30-year loan at 5% interest.
   a. How big of a loan can you afford?

   $\$130,397.13$ $N=360$ $I=5\%$
                           $PMT=700$ $FV=0$
                           $P/Y=C/Y=12$

   b. How much total money will you pay the loan company?

   $700 \times 360 = \$252,000$

   c. How much of that money is interest?

   $252,000 - 130,397.13 = \$121,602.87$

3. Pat deposits $6,000 into an account earning 4% compounded monthly. How long will it take the account to grow to $10,000?

   $I=4\%$
   $PV=6,000$ $N= 153.5$
   $PMT=0$
   $FV= -10,000$ 154 months ~ 12.83 years
   $P/Y=C/Y=12$ 12 years 10 months