Math 112 - Quiz 9

November 1, 2017

Name **key**

Score _____

Show all work to receive full credit. Supply explanations when necessary.

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1. (5 points) An annuity earns 5.48% compounded quarterly.

   (a) How much should be deposited each quarter so that you have $250,000 in 25 years?

   $$R = \frac{250000*\left(0.0548/4\right)}{\left(\left(1+0.0548/4\right)^{\wedge}(4*25)-1\right)} = \boxed{\$1181.47}$$

   (b) At the end of the 25 years, how much will you have made in interest?

   $$250000 - \underbrace{1181.47*4*25}_{118,147.^{00}} = \boxed{\$131,853.^{00}}$$

2. (5 points) A house sells for $187,450. You make an 8% downpayment. For the remaining amount, you obtain a 30-year, fixed-rate mortgage at 4.15% compounded monthly.

   (a) What are your monthly payments?

   8% of 187,450 = 14996

   LOAN AMOUNT = 187450 - 14996
   = 172,454

   $$R = \frac{172454*\left(0.0415/12\right)}{\left(1-\left(1+0.0415/12\right)^{\wedge}(-12*30)\right)} = \boxed{\$838.30}$$

   (b) How much in total will you end up paying toward the mortgage?

   $$360 * 838.^{30} = \boxed{\$301,788.^{00}}$$