Math 112 - Quiz 7

April 10, 2019

Name key

Score _____

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

1. (3 points) We deposit regular semiannual payments into an account earning 7.75% compounded semiannually. What must our regular payments be if we would like to have $50,000 in 15 years?

$$R = \frac{50000 * (0.0775/2)}{((+0.0775/2)\text{^}(2*15)-1)} \approx \boxed{\$910.28}$$

2. (5 points) For 20 years, $300 per month is deposited into a regular annuity earning 4.5% compounded monthly.

   (a) What is the future value of the account?

$$A = \frac{300 * ((1+0.045/12)\text{^}(12*20)-1)}{(0.045/12)} \approx \boxed{\$116,437.31}$$

   (b) How much of the future value is from interest?

$$116437.31 - (300)(12)(20)$$

$$= \boxed{\$44,437.31}$$

3. (2 points) Jon made monthly payments of $51.50 for 3 years to pay off a $1699 loan. How much interest did he pay?

$$(51.50)(12)(3) - 1699$$

$$= \boxed{\$155}$$