

Math 105 - Finite Mathematics - J-term 2017

Quiz 4

January 10, 2017

Name: _____

Problem 1. If you deposit \$10,000 in a savings account now, what rate compounded continuously would be required for you to withdraw \$12,500 at the end of 4 years?

$$\$12,500 = \$10,000 e^{r(4)}$$

$$1.25 = e^{4r}$$

$$\ln 1.25 = 4r$$

$$r = \frac{\ln 1.25}{4} \approx 0.05579 = \boxed{5.579\%}$$

Problem 2. Guaranty Income Life offered an annuity that pays 6.65% compounded monthly. If \$500 is deposited into this annuity every month, how much is in the account after 10 years? How much of this is interest? (Formula on back.)

$$FV = \$500 \left(\frac{\left(1 + \frac{0.0665}{12}\right)^{120} - 1}{\frac{0.0665}{12}} \right)$$

$$= \boxed{\$84,895.40}$$