

Math 112 - Quiz 8

October 25, 2017

Name key

Score _____

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

1. (3 points) \$12500 is invested at 5.25% compounded semiannually. How much is the investment worth after 9 years?

$$\begin{aligned} P &= 12500 \\ n &= 2 \\ t &= 9 \\ r &= 0.0525 \end{aligned}$$

$$A = 12500 \left(1 + \frac{0.0525}{2} \right)^{(2)(9)} = \boxed{\$19,928.15}$$

2. (4 points) You are offered two different investment options: 4.25% compounded daily or 4.3% compounded quarterly. Compute the effective rates and determine which option is better.

$$4.25\% \text{ DAILY... } E = \left(1 + \frac{0.0425}{365} \right)^{365} - 1 \approx 0.0434 = \underline{\underline{4.34\%}}$$

$$4.3\% \text{ QUARTERLY... } E = \left(1 + \frac{0.043}{4} \right)^4 - 1 \approx 0.0437 = \underline{\underline{4.37\%}}^*$$

4.3% QUARTERLY IS A
BETTER.

3. (3 points) \$250 is deposited at the end of each month into an annuity earning 6.95% compounded monthly. How much is in the account after 35 years?

$$A = \frac{250 \left(\left(1 + \frac{0.0695}{12} \right)^{12 \times 35} - 1 \right)}{\left(\frac{0.0695}{12} \right)} \approx \boxed{\$444,936.23}$$