

Math 106, Classwork on 1/29/09

Problem: A person has \$3500 to invest for 4 years. The choices of investments are:

- A: 3.0% compounded annually
- B: 2.99% compounded quarterly
- C: 2.98% compounded continuously.

Question I: How much would the person have at the end of 4 years under each account?

$$A: 3500 \times \left(1 + \frac{.03}{1}\right)^{1 \cdot 4} \approx \$3939.286 \downarrow \approx \underline{\$3939.28}$$

$$B: 3500 \times \left(1 + \frac{.0299}{4}\right)^{4 \cdot 4} \approx \$3942.906 \uparrow \approx \underline{\$3942.91}$$

Best * $C: 3500 \cdot e^{.0298 \cdot 4} \approx \$3943.083 \downarrow \approx \underline{\$3943.08}$

Question II: Find the effective annual yield of each.

$$A: y = \left(1 + \frac{.03}{1}\right)^1 - 1 = (1.03) - 1 = .03 = 3\%$$

$$B: y = \left(1 + \frac{.0299}{4}\right)^4 - 1 = (1.030236) - 1 = .030236 \approx 3.024\%$$

Best * $C: y = e^{.0298} - 1 = 1.030248 - 1 = .030248 \approx 3.025\%$