

KEY

Math 125-Quiz 20¹

October 31, 2011

You have \$10000 to invest. Choose from the following investment opportunities. All interest is compounded continuously.

1. Investing at 5% for 40 years.

$$P = \$10,000 (e^{.05(40)}) \quad \$73,891$$

2. Investing at 7% for 30 years.

$$P = \$10,000 e^{(.07(30))} \quad \$81,662 \quad \leftarrow \text{Best Option!}$$

3. Investing at 9% for 20 years.

$$P = \$10,000 e^{(.09(20))} \quad \$60,496$$

(Bonus)

1. You are offered the choice of \$100 today or \$110 on Monday, November 7. Which do you take?

Most would take \$100 now

2. The same host offers you \$100 payable on October 31, 2012, or \$110 payable on November 7, 2012. Which do you take?

Most would wait the extra week for \$110

3. Why might your answers to (1) and (2) be mathematically inconsistent?

If we prefer A to B, it shouldn't matter when.

¹You are excused to leave when you're finished with this quiz.