

Name \_\_\_\_\_

Review: Section 11-3

Formulas:

$$A = p \left( 1 + \frac{r}{n} \right)^{nt} \quad P = \frac{A}{\left( 1 + \frac{r}{n} \right)^{nt}}$$

- How much money should parents invest at the birth of their child to provide their child with \$75,000 at age 21? Assume that the money earns interest at 6.5% compounded quarterly.

$$P = \frac{75000}{\left( 1 + \frac{.065}{4} \right)^{(21 \cdot 4)}}$$

- Lisa needs to borrow \$3500 to expand her hair salon business. She learns that Peoples United Bank will lend her the money for 3 years at a rate of 9% compounded quarterly. After hearing of the rate, Lisa's father offers to lend her the money for 3 years with a simple interest rate of 6.50%. How much money will Lisa save by borrowing the money from her father?

Int.

Bank:  $A \left( 1 + \frac{.09}{4} \right)^{(3 \cdot 4)} = 4571.17 - 3500 = 1071.17$

Dad  $I = 3500 (.065)(3) = \underline{\underline{-682.50}}$

- Jim saw a sign at Webster bank that said, "3.55% rate compounded monthly—3.8% Annual Percent Yield." Is the sign giving the customers the correct rates? (Please show your work.)

$$A = 1 \left( 1 + \frac{.0355}{12} \right)^{(1 \cdot 12)} = 1.0361$$

3.61% / 0

4. Georgie Porgie won the Connecticut State Lottery and received a lump sum payment of \$1,000,000. After spending \$100,000 on a complete makeover, he decides to invest the rest in a money market account that pays 2.5% interest compounded weekly. How much money will be in the account after 10 years?
  
  
  
  
  
  
  
  
  
  
5. The town of Trumbull recently completed the construction of a new sewer line on Daniels Farm Road. The entire cost of the sewer project was \$1,500,000, and the state paid \$600,000 of the total cost through a grant. The town can delay paying the balance of the cost for 20 years. To finance the balance, the town board will charge the homeowners a fee and then invest this money in a 20 year CD paying 8.25% interest compounding daily.
  - a) What is the balance due on the sewer project?
  
  
  
  
  
  
  
  - b) How much will the town of Trumbull need to invest at this time in the CD to raise the balance due in 20 years?
  
  
  
  
  
  
  
  
  
  
6. Determine the annual percent yield on an investment at 4.25% compounding quarterly?