Name _____ Date _____

Calculating Compound Interest

Compound Interest

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

where A = amount, P = principal, r = rate, t = time in years, and n = number of times compounded per year.

Solve the story problems assuming no deposits or withdrawals.

1. Heather received $100 for her 13th birthday. If she saves it in a bank with 3% interest compounded quarterly, how much money will she have in the bank by her 16th birthday?

2. Roland earned $1,500 last summer. If he deposited the money in a certificate of deposit that earns 4% interest compounded monthly, how much money will he have next summer?

3. The C.R.E.A.M. Company has an employee savings plan. If an employee makes an initial contribution of $2,500 and the company pays 5% interest compounded quarterly, how much money will the employee have after 10 years?

4. Juan invests $7,500 at 6% interest for one year. How much money would he have if the interest were compounded
   a. Yearly?
   b. Daily?
   c. Why are the amounts in answers *a* and *b* different?

5. Carmen is saving for a new car that costs $15,000. If she puts $5,000 in an account that earns 6% interest compounded monthly, how long will it take for her to save enough money to buy the car?

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