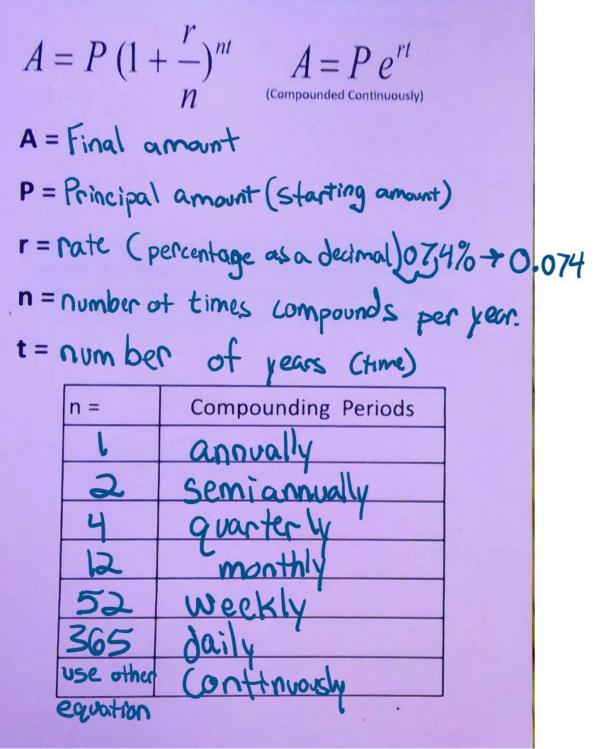
Compounded Interest



Bob is depositing \$400 in a savings account with 7% interest, compounded monthly. How much will be in the savings ac-

| A=A | $A = P(+\frac{r}{n})^{nt}$ |
|-------------------|---------------------------------------|
| P= 400 r= 0.07 | $A = 400 (1 + \frac{0.07}{12})^{120}$ |
| n= 12 / t= 10 | A = \$ 803.86 |

Janet started a bank account 12 years ago which paid 6% interest, compounded quarterly. and then forgot about it. She just remembered she had the account and checked the balance. She now has \$10,217.39. How much was her initial deposit?

How long will it take for Robert to earn \$1200 in \$500 that earns 9% interest, compounded daily?

$$A = |200 \frac{100}{500} = \frac{500(1+\frac{0.09}{365})^{365t}}{150 \text{ isolak base}}$$

$$P = 500 \frac{(10002)^{365t}}{500} = 2.4$$

$$h = 0.09 \frac{109}{1.0002} = 365t$$

$$h = 365$$

$$t = t \frac{10024}{109 1.0002} = 365t - 93550.95 = 365t$$

Michael decides to invest his graduation money (\$2000) = t
Michael decides to invest his graduation money (\$2000) = t

ously. A = Pet

Prt

(4.12)

How much will he have in 5 years?

$$A = A = A = 2000 e^{(0.072)(5)}$$

$$A = 2866.66$$

When will the money double in value? A = 4000 $U_{000} = 2000 (0.0722)$

$$= 2000 = 20000 = 2000 = 2000 = 2000 = 2000 = 2000 = 2000 = 2000 = 2000 = 2000$$

Algebra II Support

Name:

 $A = P\left(1 + \frac{r}{n}\right)^{m}$, where P is the principal, r is the rate of interest, n is the type of compounding and t is the length of the investment.

 $A = Pe^{\prime\prime}$, where P is the principal, r is the rate of interest, and t is the length of the investment.

1. Ron invested \$55,000 in a nine-year CD that pays out twelve percent compounded monthly. What is the amount after fifteen years?

2. Rick has a savings bond that will be worth \$8,220 in eight years. The interest rate of the bond is 5% that is compounded semiannually. Find the present value of the bond.

3. \$650 is invested at 5.2% in an account that is compounded continuously. How long would it take for the account to reach a balance of \$1000?

4. The number of tissue cells in a culture at the beginning of the experiment was 4300. If the cells split at a rate of r = .12, how many days will it take the culture to double? (Use $P = P_0e^{rt}$, where $P_0 = #$ of cells at start, P = # of cells at end, r = rate, t = time in days.)

5. James has a savings bond that will be worth \$10,000 in seven years. The bond has an interest rate of 20% that is compounded semi-annually. Find the present value of the bond.

6. If \$2500 is invested in an account that is compounded continuously for 5 years, the account grows to \$3200. What would the interest rate be on this account?