

# Compound Interest

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

A =

P =

r =

n (→) =

t =

Annually =

Monthly =

Weekly =

Semiannually =

Quarterly =

Daily =

Jack invests \$2,804 in a savings account with a fixed annual interest rate of 7.52% compounded 4 times per year. What will the account balance be after 9 years?

Stephanie invests \$3,614 in a retirement account with a fixed annual interest rate of 8.68% compounded 12 times per year. How long will it take for the account balance to reach \$15,722.68?

Examples:

1) You deposit \$5000 in an account that yields 3.6% annual interest. Find the balance after 2 years if the interest is compounded with the given frequencies:

a) Semiannually:

b) Quarterly:

2) You were charged 8.8% compounded monthly on your credit card balance of \$2500. If you did not make any payments on the card, how much would you owe in total after 1 year?

3) You put \$1 into an account that yields 5% compounded daily. How much money will you have after 1 year?

4) How long will it take for \$500 to double if the interest rate is 3.5% and it's compounded monthly?

5) How long will it take for \$1500 to grow into \$4000 if it compounds quarterly at 5.7 %?