

\$\$ 3.6 The Mathematics of Finance \$\$

Time = Money

When you borrow money you must pay interest.

When you put money into a savings account or loan money you can earn interest.

Interest is calculated using Exponential Functions!

Interest

#39

Compounded Annually: $A = P(1 + r)^n$

Suppose Blake invests \$500 at 7% interest compounded annually. Find the value of his investment 10 years later.

Interest

#39

Compounded Annually: $A = P(1 + r)^n$

Compounded k Times per year: $A = P\left(1 + \frac{r}{k}\right)^{kt}$

Suppose Roberto invests \$500 at 9% annual interest compounded monthly. Find the value of his investment 5 years later.

Judy has \$500 to invest at 9% annual interest compounded monthly. How long will it take her investment to grow to \$3000?

Stephen has \$500 to invest. What annual interest rate compounded quarterly is required to double his money in 10 years?

Interest

#39

Compounded Annually: $A = P(1 + r)^n$

Compounded k Times per year: $A = P\left(1 + \frac{r}{k}\right)^{kt}$

Compounded Continuously: $A = Pe^{rt}$

Suppose LaTasha has \$100 to invest at 8% annual interest compounded continuously. Find the value of her investment after 1, 5, & 10 yrs.

Miss Mendel's saving account has a 0.05% annual interest rate compounded continuously. If she has \$2000 in her savings account now how long will it take her to make \$500 in interest?