



Example Problems

Climbing Mount Everest

Your life-long dream is to climb 29,035 foot Mount Everest. The expedition will cost \$72,000, paid at the beginning of the trip. You plan to save each month for the next six years to pay for the trip.

How much must you save each month to accumulate sufficient funds if your deposits earn a stated interest rate of 6% per annum compounded monthly?

Office Space

You are contemplating the purchase of an office building. Next year net rental income will be \$400,000, which will grow at 4% per year. You believe that in 10 years the office building could be sold for \$7.4 million. You require a return on your money of 12% for investments of this type.

What is the most you would be willing to pay for this building?

Bonds

A \$1,000 face value bond that matures in 20 years has a coupon rate of 12% and pays interest semiannually.

What is the value of this bond today if similar bonds are priced with an effective annual rate of 10.25%?

What would be the bond's value if the effective rate increased to 14.49%?

Growth Stock

A company pays a current dividend of \$1.20 per share on its common stock. The annual dividend will increase by 3%, 4%, and 5%, respectively, over the next three years, and then by 6% per year thereafter. The appropriate discount rate is 12%.

What is the current price of the stock?

Growth Opportunities and Stock

Consolidated Candy Company will invest \$100,000 in a new project each year over the next two years. The project will produce a permanent return of \$55,520 per year starting in year three. Investors typically require a return of 20% on projects of this type.

What effect will this project have on the firm's value?

If the firm is worth \$1m, and each share is currently priced at \$20, what will the new price be after the announcement of this project?