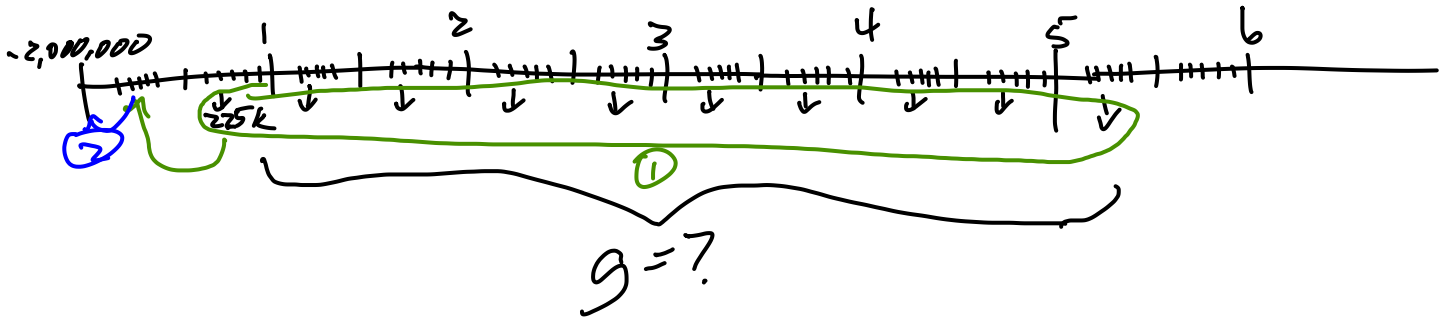


Chapter 7 – Example 1

Your firm has an opportunity to build a new factory today for \$2,000,000. Eight months from today, the factory will generate a free cash flow of \$225,000. After this initial cash flow, the factory will generate semiannual cash flows through five years and two months from today. Calculate the rate at which the cash flows must grow for the net present value of the factory to equal zero if the cost of capital for the project is 7.5% APR with quarterly compounding.



$$NPV = -2,000,000 + \underbrace{\left(\frac{225,000}{r(\frac{1}{2}) - g} \right)}_{(1)} \left(1 - \frac{(1+g)^{10}}{1+r(\frac{1}{2})} \right) \underbrace{\left(\frac{1}{1+r(\frac{1}{2})} \right)^{2/6}}_{(2)} = 0 \Rightarrow \text{solve for } g$$

$$r(\frac{1}{4}) = \frac{.075}{4}$$

$$r(\frac{1}{2}) = (1+r(\frac{1}{4}))^2 - 1$$