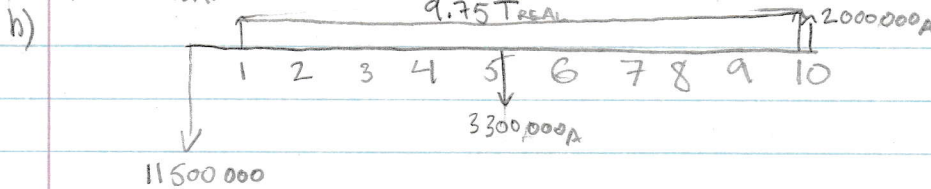


$$3a) \text{MARR}_{\text{REAL}} = \frac{1 + \text{MARR}_{\text{ACTUAL}}}{1 + f} - 1 = \frac{1 + 0.16}{1 + 0.0205} - 1 = 0.1367 = \boxed{13.67\%}$$



$$c) \text{PW} = -11,500K + 9.75(210,000)\left(\frac{P}{A}, 13.67\%, 10\right) - 3,300K\left(\frac{P}{F}, 16\%, 5\right) + 2,000K\left(\frac{P}{F}, 16\%, 10\right)$$

$$= -11,500K + 9.75(210,000)(5.2840) - 3,300K(0.4761) + 2,000K(0.2267)$$

$$= \boxed{\$-1,798,740.00}$$

Since the $\text{PW} < 0$ this is not a good investment.

$$d) \text{PW} = 0 = -11,500K + 9.75T(5.2840) - 3,300K(0.4761) + 2,000K(0.2267)$$

$$T = \frac{11,500K + 3,300K(0.4761) - 2,000K(0.2267)}{9.75(5.2840)}$$

$$T = \boxed{244,914.1094}$$

$$T = 244,915$$

The breakeven point is $\boxed{244,915}$ units per year