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$$1) 15,000 = P \times e^{.637}$$

$$15,000 = P \times 1.890799962$$

$$P = \frac{15,000}{1.890799962} = 7,933.15$$

$$2) a. TR = \left(\frac{7,500 - 13,000}{13,000} \right) = -.423 = \text{a total loss of } 42.3\%$$

$$b. AR = \left(\frac{7,500}{13,000} \right)^{1/10} - 1 = -.0423 = \text{an annual loss of } 4.23\%$$

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$$3) APY = e^{.0718} - 1$$

$$= .0744404$$

$$= 7.44\%$$

$$4) 2P = P \times \left(1 + \frac{.12}{4} \right)^{4Y}$$

$$2P = P \times (1.03)^{4Y}$$

$$2 = 1.03^{4Y}$$

$$\log(2) = 4Y \log(1.03)$$

$$Y = \frac{\log(2)}{4 \log(1.03)} = \frac{.3010299957}{.0513488988} = 5.8623$$

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$$5) A = 525 \times \frac{\left[\left(1 + \frac{.045}{4} \right)^{44} - 1 \right]}{\frac{.045}{4}} = \frac{.6359707077}{.01125}$$

$$28 \times 525 = 14,700$$

$$29,678.63 - 14,700$$

$$\text{interest} = 14,978.63$$

$$= 525 \times 56.53$$

$$= \$29,678.63$$

↳ 5.86
↳ 5 years, 10 months

$$6) 50,000 = P \times \left(1 + \frac{.045}{12} \right)^{12 \times 10}$$

$$P \times 10.45939825$$

$$P = \frac{50,000}{10.45939825} = 4,780.39$$