

Selected Problems 10.1

29

$$A = Pe^{rt}$$

$$A = 20000$$

$$t = 10$$

$$P = \frac{A}{e^{rt}}$$

$$r = 0.052$$

$$P = ?$$

$$= \frac{20000}{e^{.052(10)}}$$

$$= \$11890.41$$

35 Doubling time

$$A = Pe^{rt}$$

$$\text{let } \frac{A}{P} = 2$$

$$\frac{A}{P} = e^{rt}$$

$$\ln(2) = rt$$

$$r = .04$$

$$t = \frac{\ln(2)}{r}$$

$$= \frac{.693}{.04} \approx 17.33 \text{ yrs}$$

Extra Credit 8.1 #34

$$10 \cdot 9 \cdot 8 \cdot 7 = 5040$$

$$P(\text{correctly guess}) = \frac{1}{5040} = 0.0002$$