6.4 Even Answers

2) $y(t) = 200e^{-0.5t}$

4) $K = -0.1(\ln 2)$

6) $r = \frac{\ln 2}{15} \approx 0.0462$
$\approx 4.62\%$
$A(30) = \$8000$

8) $r \approx 7.2\%$

10) a) $t \approx 8.74$ years $\left(\frac{\ln 2}{\ln 1.0825}\right)$

b) $\frac{\ln 2}{12\ln\left(1+\frac{0.0825}{12}\right)} \approx 8.43$ years

10 c) $t = \frac{\ln 2}{4\ln 1.020625} \approx 8.49$ years

d) $t = \frac{\ln 2}{0.0825} \approx 8.40$ years

12) $y_0 = 1250$

14) $t = -\frac{\ln 0.05}{0.005} \approx 599.15$ days

16) $y \approx 1.1e^{-0.3344t}$

20) $K = \frac{1}{20}\ln\frac{7}{6}$

a) $\approx 53.45^\circ C$ above room temp

b) $\approx 23.79^\circ$ above room temp

c) ≈ 232.47 min or 3.9 hrs

26) ≈ 16.09 years

30) a) $A(t) = A_0e^t$

b) $\ln 3 \approx 1.1$ years

c) $\approx 172\%$ increase

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