Growth / Decay Word Problems

4/21/20

Ex1: $y = a(b)^x$

$y = a(1+R)^t$ $\quad r = 8\% \rightarrow .08$

$y = 1000(1 + .08)$ $\quad t = 2020 - 2005 \rightarrow 15$

$y = 1000(1.08)^{15}$

$y = 3172$ rabbits

Ex2: $y = 40000(1 - .07)$ $\quad t = 2024 - 2015$

$y = 40{,}000(.93)^9$ $\quad r = 7\% \rightarrow .07$

$y = \$20{,}816.44$

Ex3: $y = a(1+R)^t$ $\quad y = 225{,}000$

present → past $\quad r = .04$

$225{,}000 = a(1.04)^{13}$ $\quad t = 2015 - 2002 \rightarrow 13$

$225{,}000 = a(1.6650735)$

$a = \frac{225{,}000}{1.6650735}$ → bought home for \$135,129.17

Ex4: $y = a(b)^x$ $\quad b = 2$ $\quad a = 1000$ $\quad x =$ how many 20min in 1 hr $= 3$

$y = 1000(2)^{3t}$

$y = 1000(2)^9$

$y = 512{,}000$ bacteria

Ex5: (a) $y = 100(3)^{4t}$

$y = 100(3)^{4.1}$

$y = 8100$ bacteria

Stop here.