Hw 8 hints and partial solutions

Section 11.2

23) Make the bases of the exponential fns the same

$9 = 3^2$ $\qquad 3^x = (3^2)^{x-2}$

37) $P = 200$

$r = 0.25$

$t = 20$

39) 1975 $\quad t = 0$

2000 $\quad t = 25$

41) $P = 100$

$r = -0.04 \qquad t = 10$

43) $Q(t) = P\left(1 + \frac{r}{n}\right)^{nt}$

$P = 10{,}000$

$r = 8\% = 0.08$

$t = 18$

HW 8 hints and partial solutions

Section 11.3

Remember definition of a logarithm

$y = \log_a x$ if and only if $x = a^y$

for problems # 1, 3, 13, 15, 19, 21

#25, 35, 41 Rewrite using the definition of logarithms

#41, 45 Use* Properties of logarithms

#51, 57 Rewrite, then use inverse identity

$$a^{\log_a x} = x \quad \text{or} \quad \log_a a^x = x$$

Section 11.4

#35 Rewrite $6 = 2 \cdot 3$, use log properties

#47, 49, 51 Make sure to move the coefficients first

$$2 \log x + \tfrac{1}{2} \log y = \log x^2 + \log y^{1/2}$$

Hw 8 Hints and Partial Solutions

* Section 11.5

#1, 7, 13, 17 Use inverse function; log, ~~e~~ with appropriate base

$$4^{-2x+1} = 12$$

$$\log_4 4^{-2x+1} = \log_4 12$$

$$-2x+1 = \log_4 12$$

~~$-2x+1 =$~~

$$-2x+1 = \log_4 4 + \log_4 3$$

#19, 23, 27 Combine logarithms ~~B~~ using properties from 11.4

#31 Can start with $3 = e^{0.03t}$

#33 Can start with $\frac{1}{2} = e^{(-0.055)t}$