

$$\log \hat{y} = -4.41877 + 3.28599 \log x \quad r = .972$$

$$-4.41877 + \log x^{3.28599}$$

$$10^{\log \hat{y}} = 10$$

$$\hat{y} = 10^{-4.41877} \cdot 10^{\log x^{3.28599}}$$

$$\hat{y} = (.0000381) x^{3.28599}$$

Power Law
of Logs
 $a \log x = \log x^a$

3.) Word Problems

$$f(t) = C \cdot a^t$$

Ex: You buy a car \rightarrow \$12,000
and it depreciates 18% per
year. Find its value after 2
years.

$$f(t) = 12000(1 - .18)^t$$

$$f(t) = 12000(.82)^t$$

$$f(2) = 12000(.82)^2$$

$$= \$8068.80$$

Interest

$$A = P \left(1 + \frac{R}{n} \right)^{nt}$$

P = principal
 R = rate decimal
 n = how often compounded
 t = time in years

Ex: \$2300

Find the amount after 4 years at 4.4% compounded

a) annually

$$\begin{aligned} I &= P \left(1 + \frac{R}{n} \right)^{nt} \\ &= 2300 \left(1 + \frac{0.044}{1} \right)^4 \\ &= \$2732.31 \end{aligned}$$

2→T	1
4→T	2
	4
P(1+R/N)^(NT)	
	2732.309113



b. Quarterly

$$A = P \left(1 + \frac{R}{n}\right)^{nt} \quad (4.4)$$

$$A = 2300 \left(1 + \frac{.044}{4}\right)^{4 \cdot 4}$$
$$= \$2739.97$$

c. Daily = 365

D. monthly = 12

Continuously

$$A = Pe^{rt}$$

$$A = 2300e^{(.044 * 4)}$$
$$= \$2742.61$$

P(1+R/N)^(NT)	4
2732.309113	
4*N	4
P(1+R/N)^(NT)	4
2739.973266	

Just store
the new

hit 2nd enter
several times
to get the new
amount

→ Find the
amount if com pounded
continuously for 4 yrs.

Let Q represent in grams the mass of a quantity of carbon 14, which has a half life of 5730 years. The quantity present after t years is

$$Q = 10\left(\frac{1}{2}\right)^{t/5730}$$

a. Find the initial quantity present.

$$\begin{aligned} Q(0) &= 10\left(\frac{1}{2}\right)^{0/5730} \\ &= 10 \cdot 1 \\ &= 10 \text{ grams} \end{aligned}$$

Find the quantity present after 2000 years

$$\begin{aligned} Q(2000) &= 10\left(\frac{1}{2}\right)^{2000/5730} \\ &= 7.851 \text{ grams} \end{aligned}$$