reg compounding $A = P\left(1 + \frac{r}{n}\right)^{n \cdot t}$ (rate, time in year)

A: after compounding; P: principle; n: # of times compounded

$A = Pe^{rt}$ (r: rate, t: time) continuously

A: amt after; P: prin

Nov 27-8:37 AM

① $P = \$7050$ annually 1

$r = .12$

n = quarterly 4

$t = 3$

$A = 7050\left(1 + \frac{.12}{4}\right)^{4(3)}$

$= 9980.33$

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② $P = \$1000$

$r = .065$

continuously

$t = 10$

$A = Pe^{rt}$

$A = 1000e^{.065(10)}$

$= \$1915.54$

Nov 27-9:04 AM

a. \$6812.50

b. \$7095.06

c. \$7161.30 $A = 5000\left(1 + \frac{.0725}{1}\right)^{1(5)}$

d. \$7184.33

e. \$7184.59

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$m = \frac{\log E - 11.4}{1.5}$

① $10^3 = 1000$ times stronger

③ $m = \frac{\log(3.981 \times 10^{21}) - 11.4}{1.5}$

$=$

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① $P = P_0 2^{t/3}$ (t: time)

after time = orig

$P = 1000 \cdot 2^{(5/3)} = 3174$

(b) $P = 1000 \cdot 2^{-6/3} = 250$

c. $\frac{2500}{1000} = \frac{1000 \cdot 2^{t/3}}{1000}$

$2.5 = 2^{t/3}$

$3 \cdot \log_2 2.5 = \frac{t}{3} \cdot 3$

$t \approx 3.97$ hours

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2. $V = V_0(.95)^{\text{time in mins.}}$

(amt after time; orig amt)

$V = 500{,}000(.95)^{2.25}$

$= 445{,}500 \text{ ft}^3$

b. $\frac{250{,}000}{500{,}000} = \frac{500{,}000(.95)^t}{500{,}000}$

$.5 = .95^t$

$\log_{.95} 5 = t$

$t \approx 13.5$ mins.

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c. ≈ -6.5 min

3.) $W^{\text{watts}} = 50e^{-.004 \text{ time in days}}$

$W = 50e^{-.004(500)}$

$= 6.8$ watts

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4) $N^{\text{people}} = 300 - 300e^{-.12t \text{ days}}$

$\frac{200}{-300} = \frac{300}{-300} - \frac{300e^{-.12t}}{-300}$

$\frac{-100}{-300} = \frac{-300e^{-.12t}}{-300}$

$\frac{1}{3} = e^{-.12t}$

$\frac{\ln_e(1/3)}{-.12} = \frac{-.12t}{-.12}$

$t \approx 9.2$ days

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