Correcting Review: Thursday Feb.22nd

Return and Correct SWYK 1.2 & SWYK 1.3

Today's Learning Goal(s):

By the end of the class, I will be able to:

a) review all ideas for the unit summative.

Yesterday's work

pp. 393-394 #1, 3-6, 7b, 8, 10(a,b)
Challenge Problem #15

Please submit the homework sheet 1.8.2, with your name on the top.

p.394 #10

10. Radioactive tritium has a half-life of 12 years. A sample of this material has a mass of 1000 g. An equation that models the mass, m grams, remaining after t years is $m = 1000(0.9439)^t$.

a) How much radioactive tritium remains after 100 years?

b) How long does it take until only 100 g of the radioactive tritium remain?

a) $m = 1000(0.9439)^t$

$\quad = 1000(0.9439)^{100}$

$\quad \doteq 3.1088$

$\therefore 3.1$ g remains after 100 years.

Half-Life Eqn?

$P = P_0 \left(\frac{1}{2}\right)^{\frac{t}{h}}$

$\quad = 1000\left(\frac{1}{2}\right)^{\frac{100}{12}}$

$\quad = 1000(0.5)^{\frac{100}{12}}$

$\quad \doteq 3.10039$

b) $m = 100$ g

$\therefore 100 = 1000(0.9439)^t$

$\dfrac{100}{1000} = 0.9439^t$

$\log 0.1 = t \log 0.9439$

$\dfrac{-1}{\log 0.9439} = t$

$t \doteq 39.88$ $\therefore$ it takes about 39.9 years

If your money tripled every 5 years.

$$A = P(3)^{\frac{n}{5}}$$

p.394 #15

15. Two historical purchases of land in North America are given. In each case, if the money had been invested at 6% compounded annually, what would its value be today?

a) In 1867, the United States purchased Alaska from Russia for $7 200 000.

b) In 1626, Manhattan Island was sold for $24.