Algebra HW Exponential Models March 18, 2019 Name _____

Monday

Write a function that models the situation (HINT: this is similar to half-life). An investment of $2000 doubles every 5 years.

Use the model to determine value of the investment in 60 years.

For compound interest, state the value of "n" for the given words:
Annually:
Monthly:
Quarterly:
Semi-annually:
Daily:

Cobalt-60 has a half-life of 5 years. Write a model for this is you have 100 grams of Cobalt-60 originally.

Suppose you have 100 grams of Cobalt-60 in 1980. How much is left in the year 2010? Use the model to find the answer.

You put $10,000 into an account that pays 2% interest compounded monthly. Write a model for this.

The half-life of Plutonium-14 is approximately 25 seconds. Find the amount of Plutonium-14 left from a 6 gram sample after 100 seconds..

For the problem above, find the amount of money in the account after 12 years.

Rewrite the following numbers as a power with a base of 2.

16^x

4^{3x}

32

$4^{(x+3)}$

You put $4500 into an account that pays 4% compounded quarterly. Write a model for this.

Find the amount of money in the account above after 5 years.

Solve the equations by rewriting each side with like bases.

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

$8^{-3x} = 64$

$25^{-x} = 125^{3-2x}$

$3^{-x} = 81$

$5^{x+3} = 625$

$4^{-2x} = 16$