Algebra II   Thursday, May 7, 2020

Hello, Everyone!

It was really great hearing from all of you!

I was truly inspired by how well all of you responded to all of the Math homework that I assigned to complete. One would think that now that you are exempt from the Regents, you would slacken off in the quality and thoroughness of your Math assignment!

But not you guys! You gave it your all, and you've proven once again what a wonderful, exceptional Math class you all are! And as I said previously, you're a real "DREAM TEAM" of a Math class.

A very special "SHOUT OUT" goes to Chaim Asher Hershfang, Ephraim Borenstein, Shloimy Shapiro, Yossi Gold, Shimshi Zelikovitz, Nosson Schloss and Avromi Katz for going "ABOVE AND BEYOND THE CALL OF DUTY", as the saying goes, in the way they completed their assignments.

We will be having our conference call, the same as last week at 917-932-8638 from 4:15 - 4:35 PM. Looking forward to hearing from all of you.

Our assignment of this week is:
June 2017 Regents - #37 page 26 of the booklet
August 2017 Regents - #37 page 31 of the booklet
January 2018 Regents - #5 page 33 of the booklet

Please remember to submit all work in a timely manner – similar to last week's.

Work may be returned in via any of the following:

Email mathi.mirrer@gmail.com
Fax 718 375 6342
Mail Mirrer Mesivta High School 1791-5 Ocean Parkway Brooklyn NY 11223

Please indicate how you would like your work to be returned.

I cannot emphasize enough the importance of doing your homework in a timely manner.

Everything will be graded, and will count toward your final grade. Even more importantly, it will be kept on file for the State of NY in place of your Regents exam and as a proof that you fulfilled your class requirements.

Please remember, as per Common Core requirements, all alternate solutions are fully acceptable if properly and fully documented.

Looking forward to a successful conclusion to our school year. Keep up the great work. You guys are really wonderful.

Rabbi E. Isralewitz

37 A radioactive substance has a mass of 140 g at 3 p.m. and 100 g at 8 p.m. Write an equation in the form $A = A_0\left(\frac{1}{2}\right)^{\frac{t}{h}}$ that models this situation, where h is the constant representing the number of hours in the half-life, A_0 is the initial mass, and A is the mass t hours after 3 p.m.

Using this equation, solve for h, to the *nearest ten thousandth*.

Determine when the mass of the radioactive substance will be 40 g. Round your answer to the *nearest tenth of an hour*.

37 The value of a certain small passenger car based on its use in years is modeled by $V(t) = 28482.698(0.684)^t$, where $V(t)$ is the value in dollars and t is the time in years. Zach had to take out a loan to purchase the small passenger car. The function $Z(t) = 22151.327(0.778)^t$, where $Z(t)$ is measured in dollars, and t is the time in years, models the unpaid amount of Zach's loan over time.

Graph $V(t)$ and $Z(t)$ over the interval $0 \le t \le 5$, on the set of axes below.
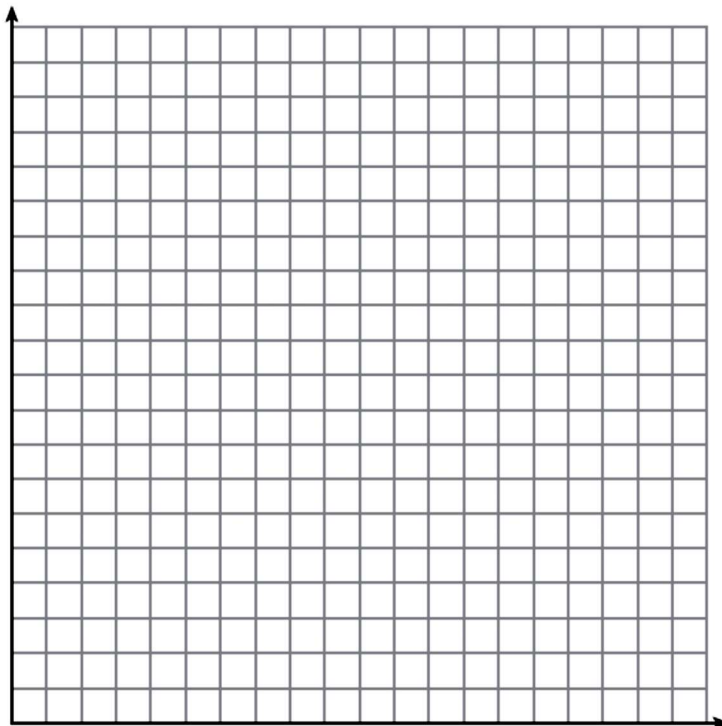
State when $V(t) = Z(t)$, to the *nearest hundredth*, and interpret its meaning in the context of the problem.

Zach takes out an insurance policy that requires him to pay a $3000 deductible in case of a collision. Zach will cancel the collision policy when the value of his car equals his deductible. To the *nearest year*, how long will it take Zach to cancel this policy? Justify your answer.

5 A certain pain reliever is taken in 220 mg dosages and has a half-life of 12 hours. The function $A = 220\left(\frac{1}{2}\right)^{\frac{t}{12}}$ can be used to model this situation, where A is the amount of pain reliever in milligrams remaining in the body after t hours.

According to this function, which statement is true?

(1) Every hour, the amount of pain reliever remaining is cut in half.

(2) In 12 hours, there is no pain reliever remaining in the body.

(3) In 24 hours, there is no pain reliever remaining in the body.

(4) In 12 hours, 110 mg of pain reliever is remaining.