6/12/2017

The reason you are getting this packet is because you have signed up or was recommended for AP Calculus. You have taken Algebra I, Geometry, Algebra II, Pre-Calculus (and maybe even Stats) up to this point and the next logical step is calculus. Calculus is a wonderful subject. It is actually pretty easy if you don’t mind working hard. Next year we will learn about limits, derivatives, and integrals. We will also apply limits, derivatives and integrals to the real world! It is a ton of fun!

This packet is a short packet which gives me an idea of what you know/remember from previous years. Use all the resources at your disposal, like Google or emailing me, to complete this packet.

The AP teachers have come up with a summer homework policy which states:

“In your AP classes there is a requirement and an expectation that you complete all of your summer work before the class deadline. The assignment and due date for your summer work was given to you at the end of last school year by your AP teacher. For those of you who do not complete your summer work there will be a grade penalty, a conference with Ms. Belton, and also the possibility of removal from class. Any summer work which is turned in after your class’s assigned due date and prior to Friday, September 8, will receive a 5% grade penalty on your marking period 1 final grade. Any summer work which is turned in after Friday, September 8, will receive a 10% grade penalty on your marking period 1 final grade. Anyone who did not complete summer work after Friday, September 8 will not only receive the 10% grade penalty but will also have a conference with your AP teacher, and an administrator for possible removal from class.”

It is important to complete this packet. If you lose it or want an extra copy please email me! If you have any questions please email me (**no matter what**)!

If you have any questions, please don’t hesitate to email me a [julianne.bednarcik@new-haven.k12.ct.us](mailto:julianne.bednarcik@new-haven.k12.ct.us).

Have a great summer. I am looking forward to working with you next year!

Mrs. Bednarcik

**AP Calculus Summer Assignment**

**Objective**

This first purpose of this assignment is for you to review the topics of Algebra II and Precalculus that will be used regularly in AP Calculus. In order to receive full credit, this assignment must be done in full, with all necessary work shown on separate paper (except for the graphs and the unit circle) with each problem labeled.

The second purpose of this assignment is to see if you are ready for the workload. This packet should take between 2 and 5 hours depending on how fast you work and how well you remember these topics. It is expected that sometime in the next two and a half months that you do this work. If you choose not to it is an indication that you are not ready for the work load of this AP class and you will be dropped from AP Calculus.

**Need help?**

If you have trouble with anything you should do whatever you need to do in order to understand and complete the problems. This can include looking in your notes from previous classes, contacting your classmates, looking up topics on the internet, and emailing me. The website **www.wolframalpha.com** is also extremely helpful. If you’ve worked on a single problem for more than ten minutes, you’ve already spent too much time on it.

My email is [**julianne.bednarcik@new-haven.k12.ct.us**](mailto:julianne.bednarcik@new-haven.k12.ct.us) and it will be checked almost daily throughout the summer. Don’t be shy

**Due Date:**

**First Class of the 2017-2018 School Year**

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1.) If find…

a.)

b.)

c.)

d.)

e.)

f.) Find if

g.)

h.)

2.) If find…

a.)

b.)

3.) If and , find…

a.)

b.)

c.)

d.) Find when

4.) Find the domain of each function. Remember that domain is the *possible x-values*, so you should look for things that are NOT possible, such as dividing by 0, square-rooting a negative number, or taking a log of a negative number or 0.

**Ex:** The domain of is . **Ex:** The domain of is .

a.)

b.)

c.)

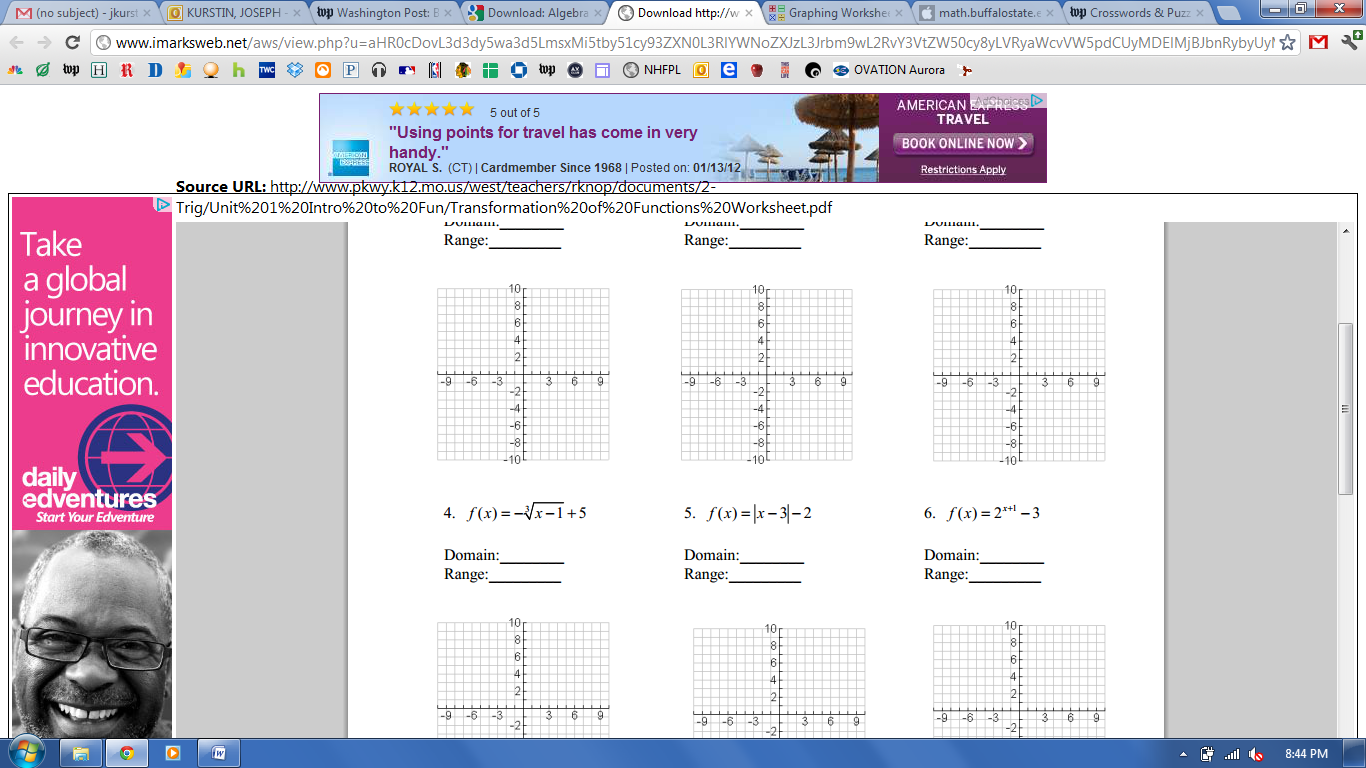
d.)

e.)

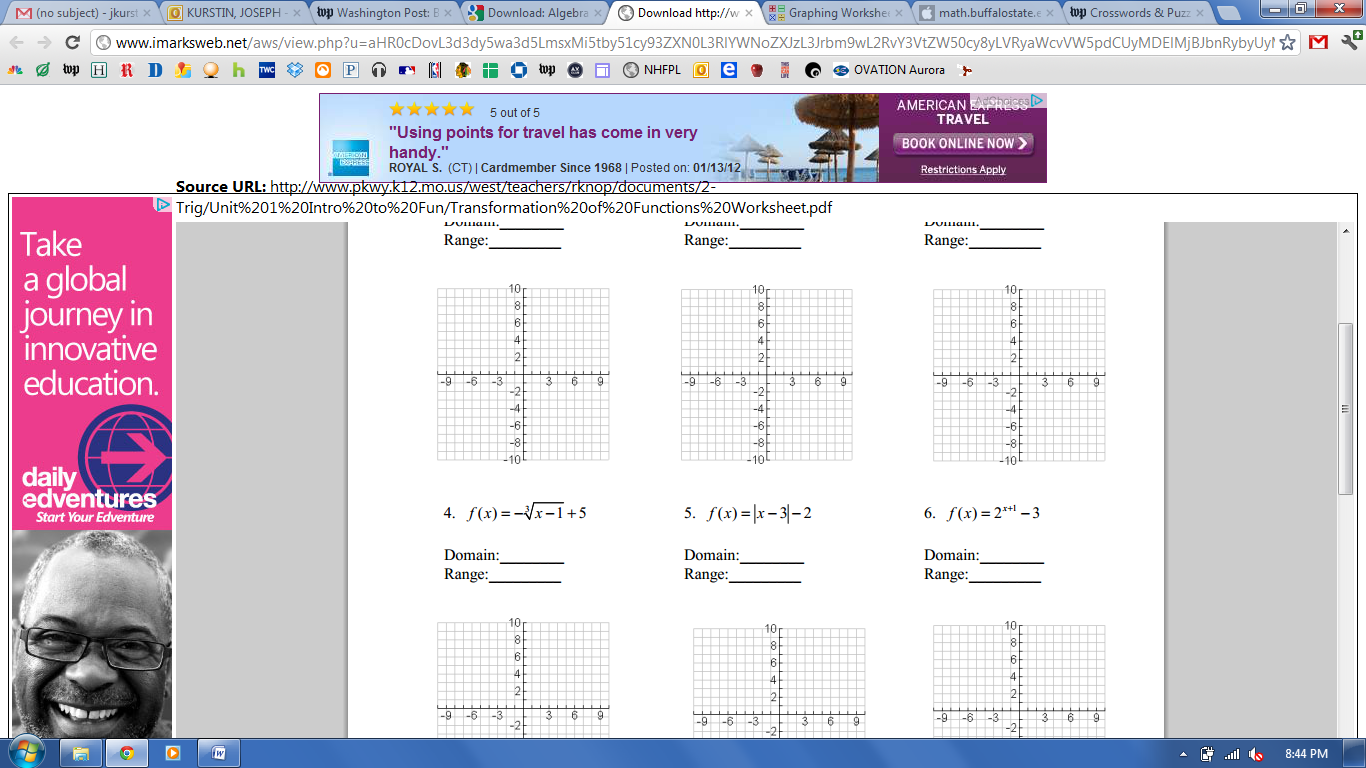
f.)

5.) Sketch the graphs of the following functions. Your graph should include specific points. Use a table if necessary.

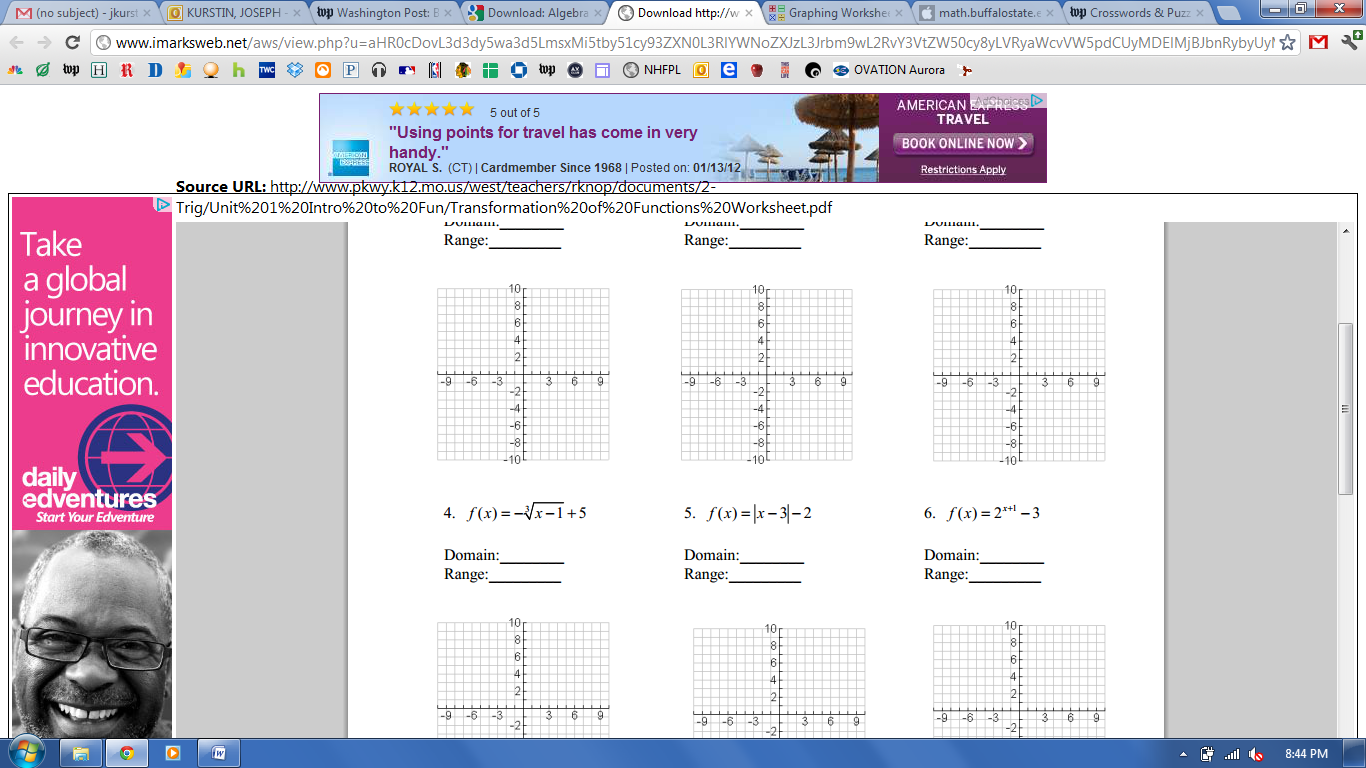
a.)



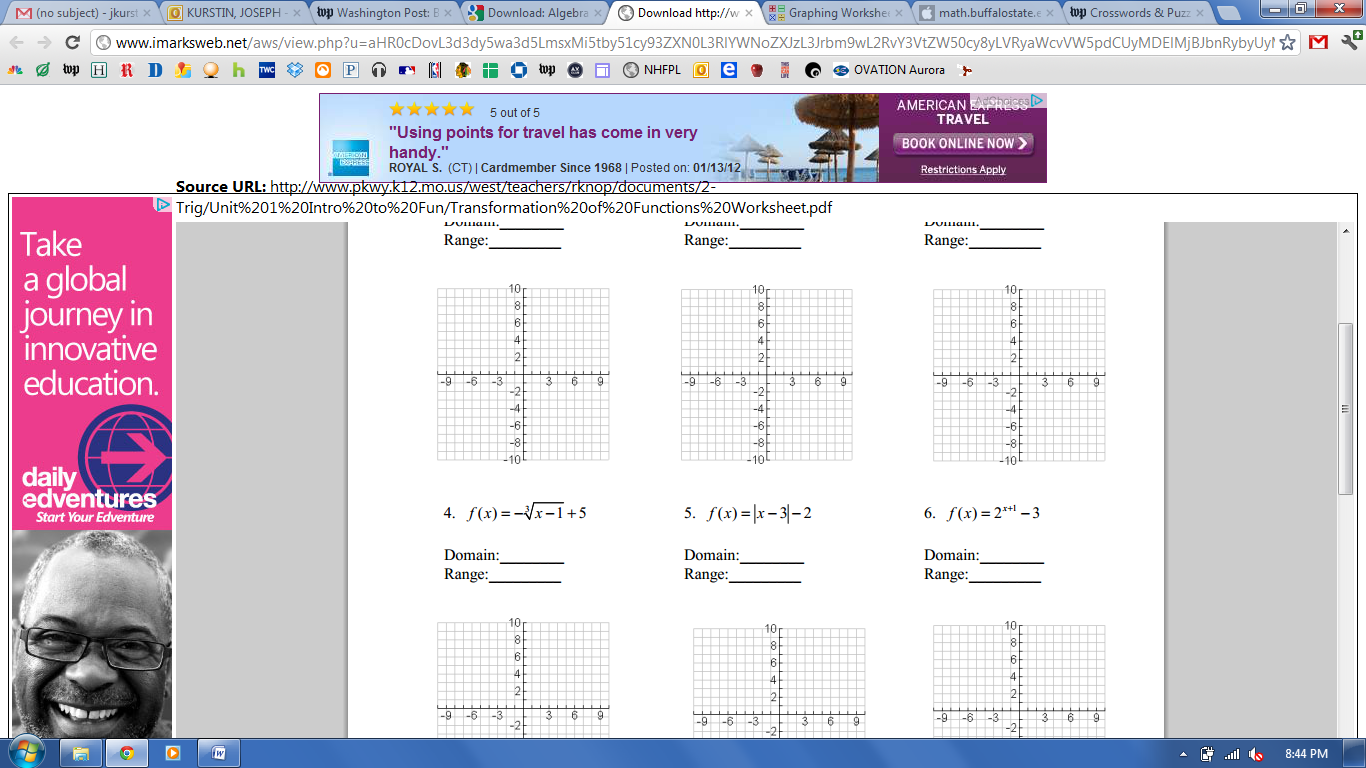
b.)



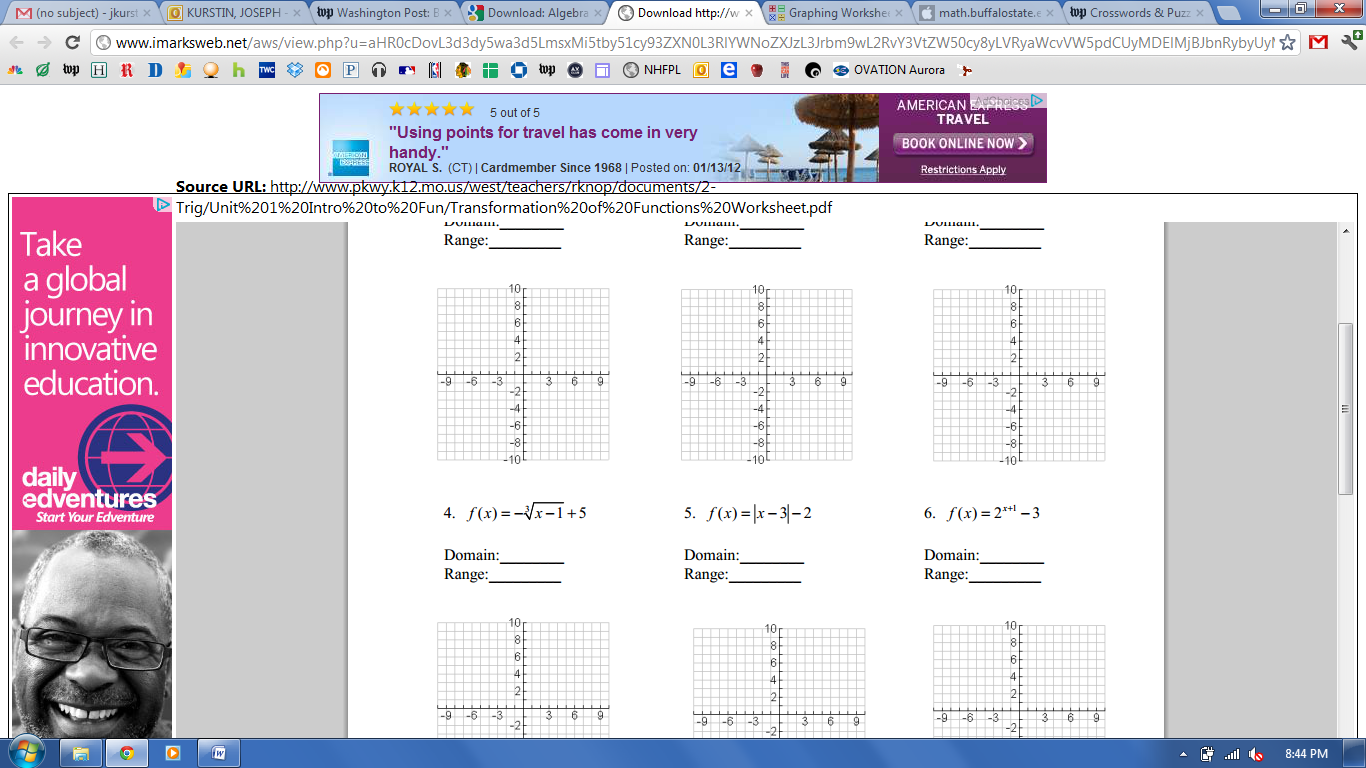
c.)



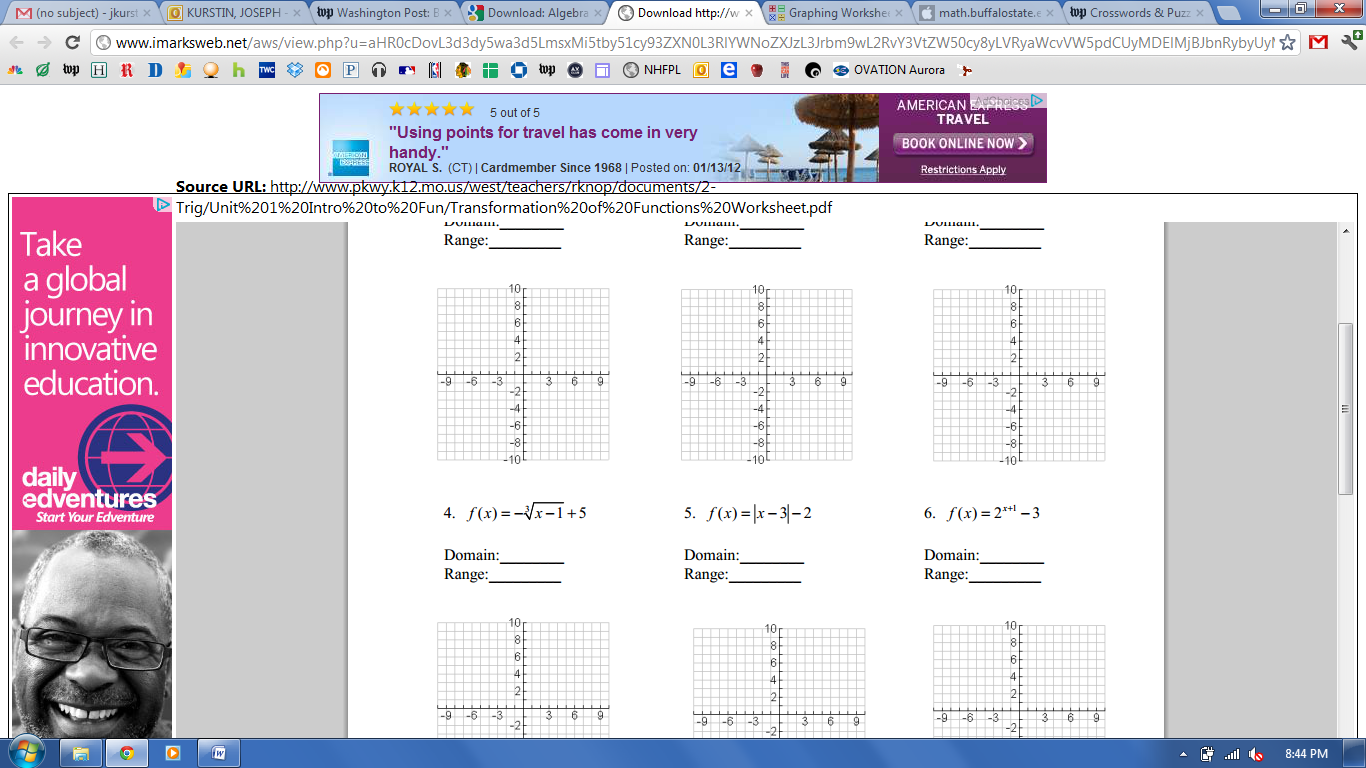
d.)



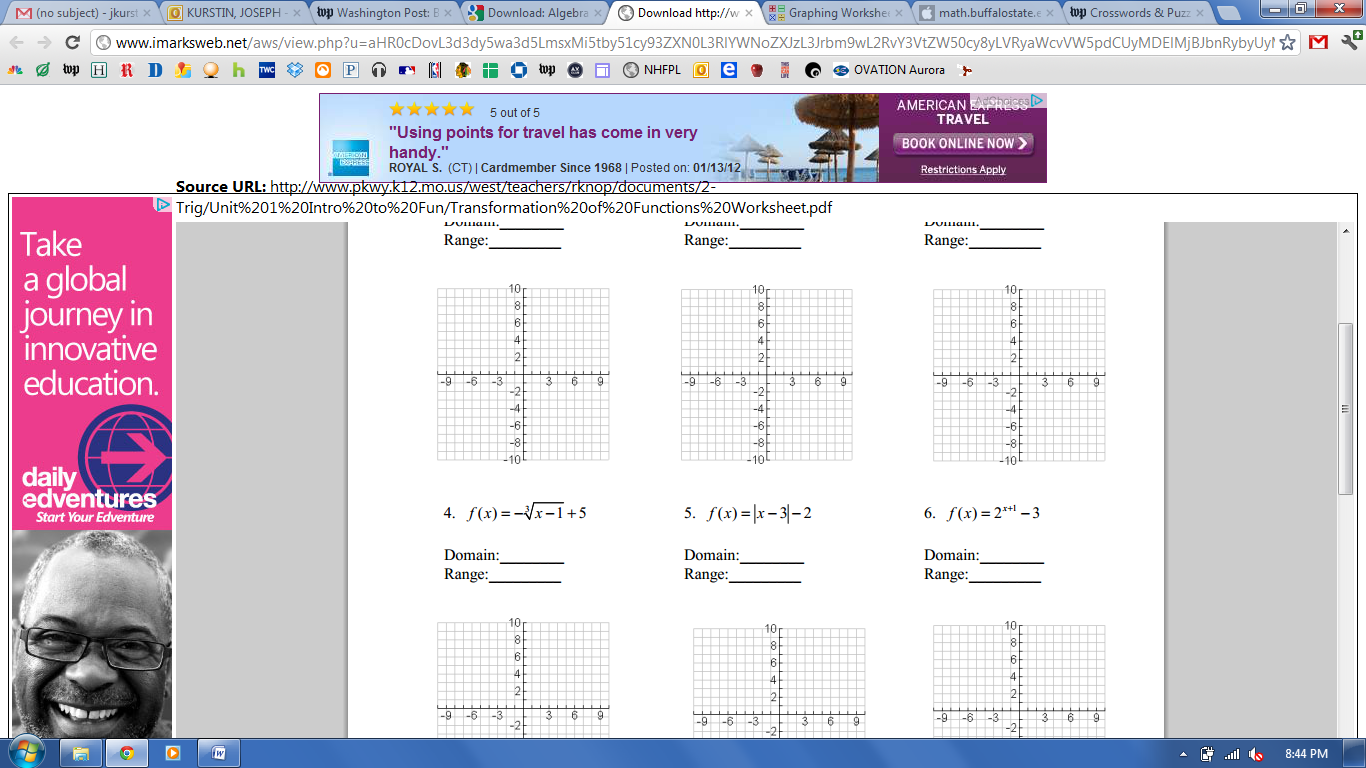
e.)



f.)



g.)



6.) Translate each of the following from exponential form to log form.

a.)

b.)

c.)

d.)

e.)

7.) Solve each equation for the variable. This will involve a variety of techniques, including factoring, inverse trigonometry, and exponent log rearrangement (like in #6).

a.)

b.)

c.)

d.)

e.)

f.) *(Hint: multiply everything by x)*

g.)

h.)

8.) Find each limit.

a.)

b.)

c.)

d.)

e.)

f.)

9.) Fill out the missing angles and values of the unit circle, then determine the trig values based on this.

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Based on the information above, you should be able to quickly answer all of the following:

etc...

10.) One of the most important skills you will need in AP Calculus is to translate quickly between different ways of writing the same thing. For example, square root can also be written as power of and a component with a negative exponent can also be written in the denominator with a positive exponent.

**Ex:** means the same thing as

Match each of the following expressions on the left with its equivalent term on the right.

A.)

B.)

C.)

D.)

E.)

F.)

G.)

H.)

I.)

J.)

K.)

L.)

M.)

N.)

O.)

P.)

Q.)

R.)

S.)

T.)

U.)

α.)

β.)

γ.)

δ.)

ε.)

ζ.)

η.)

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λ.)

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ξ.)

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ρ.)

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σ.)

τ.)

φ.)

χ.)

ψ.)

ω.)