




Name: _____ Per: _____ Date: _____

Logarithmic and Exponential Activity

Braden and Lilly were sitting around talking about their savings accounts. They were both very excited to be juniors in high school and were looking forward to their college career. As soon as they started talking, so many questions popped in to their heads! How much do I have saved? What kind of savings accounts are out there? How could I best invest my money? Why did my teacher teach me logarithms anyways? Lil says to Braden, "How about we actually do some research and better ourselves as young adults and learn a little something about how this all works." Braden replied, "you're right, Ms. Balboni is always non-stop talking about how we need to understand these, what are they called, exponential functions, something like that." "I'll do some research and see what's out there and then we can plan better for our future!" "Sounds good to me" Braden said. Lilly took to the internet and went to find some different accounts.

Her Findings: (This information is accurate as of 10/17/2018)

Financial Institution			
Savings Account	Offers a Statement Savings Account with an APR of 0.07% (compounded monthly) You must have at least \$25 in the account to earn interest.	Offers a Statement Savings Account with an APR of 1.0% (compounded monthly)	Offers a Statement Savings Account with an APR of 0.01% (compounded monthly) You must have at least \$25 in the account to earn interest.
CD Offering	They offer the following CD's 12 Month - 0.40% APR 18 Month - 0.55% APR 24 Month - 1.78% APR 60 Month - 1.44% APR These are compounded monthly	They offer the following CD's 12 Month - 2.5% APR 18 Month - 2.5% APR 24 Month - 2.6% APR 60 Month - 3.0% APR These are compounded monthly	They offer the following CD's 13 Month - 1.09% APR 18 Month - NA 25 Month - 1.19% APR 60 Month - 1.00% APR These are compounded monthly
Major Benefits & Drawbacks	Benefits: Local to Brockton & a Branch here at BHS Drawbacks: No Branch locations outside of South Shore.	Benefits: Can bank totally online. Drawbacks: No physical branches until you go into Boston.	Benefits: Many ATMs around the city and all over US, etc. Drawbacks: None in regards to availability.

The Braden say, "Wow Lilly you did a lot of research, but how is looking at this going to help us, it just looks like a lot of numbers to me." Lilly responds, "Well if you actually pay attention is Ms. Balboni's class, maybe you'd have a clue. That's beside the point though, I think that we should work through some scenarios and see which bank may be best for us, at least that way we will have a better understanding of what we are actually looking at!" "I can see you have been paying attention, alright, I guess we can put this to use, what do you suggest?" "Well Braden, so glad you asked...."

1. Lilly says "I think before we even really get going on these savings accounts, we should write an exponential function for each one. It will just make our lives so much easier and by showing our work, Ms. B will know we did listen to her." "I agree, Lilly, you are quite smart."

Harbor One:	Capital One:	Bank of America:
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2. "Now for the fun stuff!" Lilly exclaimed. "Let's say, we work really hard all summer long and are able to save up \$1500 and we invest it in each one of these two year CDs, how much interest would we make?"

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3. What if you had \$5000 what investment would you make? How long?

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