

Math 10a

August 31, 2014

Extra Review Problems from High School Math

THIS IS NOT HOMEWORK.

1. Pick your three favorite numbers a , b , and c and plot the graph of $\frac{1}{ax^2+bx+c}$.
2. Plot $y = |x|^3$.
3. A certain kind of amoeba reproduces by splitting into n copies of itself. On average, each amoeba performs this splitting every day or so. A scientist starts with a population of 100 of these amoebas and then a week later finds about 200,000 of them. What is a good guess for n ?
4. Yea or nay? $\log_3(3ab) \ln(3) - \ln(3) - \ln(a) - \ln(b) = 0$.
5. For what values of x is $x^2 - x - 1$ bigger than x ?
6. $x = \sqrt{x+1} - 1$. Solve for all solutions x .
7. When is $\sin(x) > x$?
8. Plot the graph of $y = e^x + e^{-x}$.
9. Someone asks you to compute 27^2 in your head. What's your strategy?
10. Compute 27^2 in your head.
11. Previous two questions, but for 27^3 .
12. When the weatherman on one channel says "50% chance of rain today" and the weatherwoman on another channel says "40% chance of rain today", what's going on? How are they deciding on these numbers? What might lead to the discrepancy? Is this use of the word "chance" different from its usual usage, e.g. "when I flip a coin it has a 50% chance of landing on heads"?