

1. A car starts out slowly, then goes faster and faster until it gets a flat tire which must be fixed before proceeding. Sketch a graph of the distance traveled as a function of time.
2. You decide to make Math T-shirts. You have fixed costs of \$166 and variable costs of \$5 per shirt. Find the cost equation. If you sell the shirts for nine dollars each, what is your break-even point ?
3. The depth of water in a tank oscillates once every 5 hours. The smallest depth is 4.6 feet and the largest is 9.3 feet. Find a formula for the depth as a function of time.
4. You are selling iced cappuccino's. If you charge one dollar, you end up making 600 sales every week. Each dime increase in price results in 20 fewer sales. Find and graph the demand curve.
5. You have a budget for textbooks and social events of \$1200. Textbooks cost \$100 each. A night out costs \$30. Find and graph the equation of your budget constraint.
6. Which function eventually gets larger $y_1 = 1000x^3$ or $y_2 = 50x^{3.1}$? Why ?
7. The population of Podunk grows at an annual rate of 6.5%. If initially there were 180,000 inhabitants, how long before the population reaches one million ?
8. The half-life of Mobiliium is six hours. How long before 15 grams decays into 10 grams
9. You want to give your newborn nephew one million dollars, in the form of mutual funds, on his 18st birthday. Assuming that the mutual funds return at a continuous rate of 14.25%, how much should you invest now ?
10. How is the graph of $y = 3f(x - 2) + 5$ gotten from that of $y = f(x)$?
11. A polynomial $f(x)$ has 3 local maximums (points that look like the top of a mountain). What is the least possible degree of $f(x)$?
12. Review all the quizzes, lectures, homework, and everything else.