

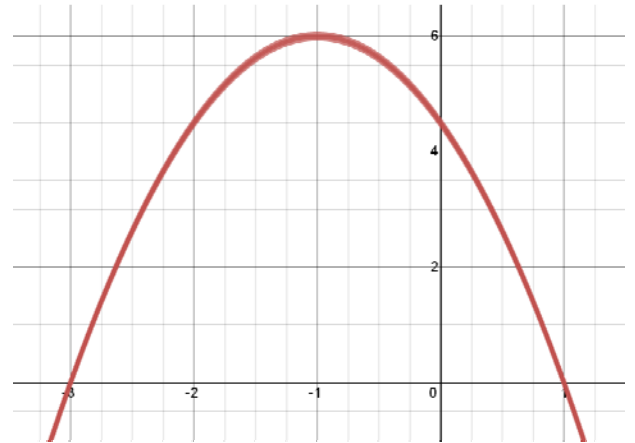
Wednesday Workshop Problems for Solution Posting - Week 4

Goals: all group members should understand problem, solution, and steps in between. Group should collaboratively produce a solution which is clear, complete, and correct, shows all steps/reasoning with all steps valid, and that aims to be a document that someone else can learn from.

Make sure all group members understand the problem and its solution. Collaboratively produce a public solution on whiteboards. Revise solution based on feedback. Solution must be posted by 11:59 pm tonight by one group member; see detailed instructions from the Solution Postings and Reviews Overview (available at the Week 2 Calendar page). Post your Review to two (2) solutions by 6:00 pm Friday. If your group produced a solution to Problem A, then you will Review solutions to Problem B. If your group produced a solution to Problem B, then you will Review solutions to Problem C. If your group produced a solution to Problem C, then you will Review solutions to Problem D. If your group produced a solution to Problem D, then you will Review solutions to Problem A.

A. based on Quiz 3 #4 & #6:

1. Find an equation for the quadratic function shown graphed.
2. A rectangle is drawn so that the width is 4 feet shorter than the length. The area of the rectangle is 60 square feet. Find the length of the rectangle.



B. based on Quiz 3 #3 & #5:

1. A bicycle initially traveling at 5 m/s slows down at a constant rate to 3 m/s over a distance of 4 m. What is the bike's acceleration?
2. On Planet X, a ball launched straight up from ground level with some initial velocity travels straight up and down returning to its starting position, moving with constant downward acceleration while traveling. Neglecting air resistance, its height (in meters) as a function of time (in seconds) between when it is thrown and when it lands is given by:
 $y = -10t^2 + 30t$. Determine the total travel time (from launch to land) and the maximum height above ground reached by the ball.

C. based on Pre-calculus Problem Set 3 #16:

A farmer plans to enclose two pens with fencing, as shown (figure not to scale). She has 600 feet of fencing available. Determine the dimensions which enclose the largest area.



D. based on Physics Problem Set 3 #11:

Jack drops a stone from rest off of the top of a bridge that is 44.1 m above the water. After the stone falls 4.9 m, Jill throws a second stone straight down. Both rocks hit the water at the exact same time. What was the velocity of Jill's stone just after she threw it? Assume upward is the positive direction, downward is negative, and that air resistance can be neglected. (Indicate the direction with the sign of your answer.)