Test 2 is on Friday, December 2

Today: Applied optimization

Watch videos 6.6, 6.7, 6.9 before next Tuesday’s class.
Supplementary videos: 6.5, 6.8

Watch Videos 6.10, 6.12 before next Wednesday’s class. Supplementary video: 6.11
A farmer has \(300\) m of fencing and wants to fence off a rectangular field and add an extra fence that divides the rectangular area in two equal parts down the middle. What is the largest area that the field can have?
Find the point on the parabola $y^2 = 2x$ that is closest to the point $(1, 4)$. 
A painting in an art gallery has height $h$ and is hung so that its lower edge is a distance $a$ above your eye. How far from the wall should you stand to get the best view?
You hear a scream. You turn around and you see Pedro is on fire. Literally. Luckily, you are next to a river. Pedro is 10 meters away from the river and you are 5 meters away from the point $P$ on the river closest to Pedro. You are carrying an empty bucket. You can run twice as fast with an empty bucket as you can run with a full bucket. How far from the point $P$ should you fill your bucket in order to get to Pedro with a bucket full of water as fast as possible?