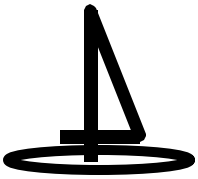
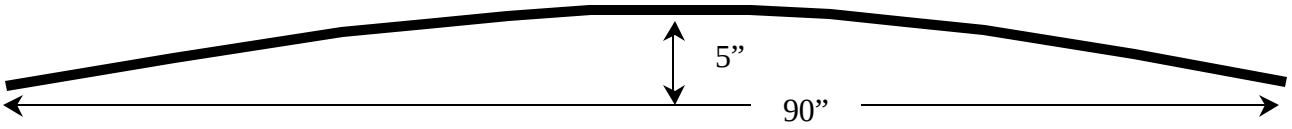


SurfSail Designs

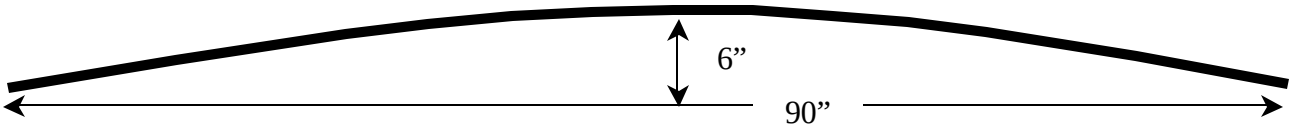
From: Design Chief

For our new children's "Quadrasail" design, we want to test several possible parabolic mast shapes:

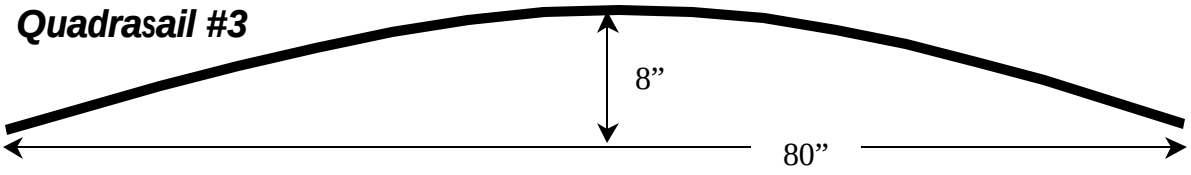
Quadrasail #1



Quadrasail #2



Quadrasail #3



Task 1: Please determine the equation of each of the above curves, so that we can get these potential designs into the computer.

Task 2: The boss says we could produce a whole family of possible parabolic mast shapes, using this formula:

y = ax(x – h) *h = height of mast.*

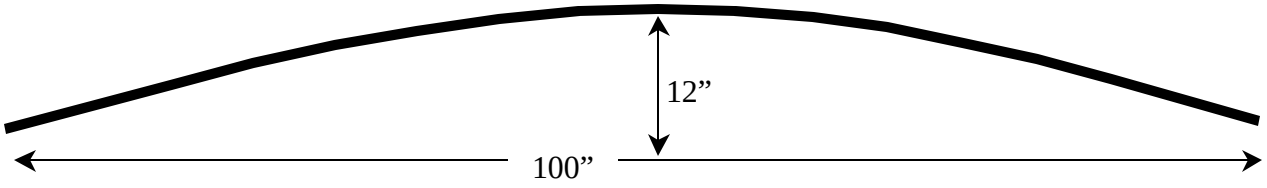
Let's see if that's right. Try these values for "*a*" for a mast which is 90" high, and show me what the resulting curves look like:

*a = -4/(45*45)*

*a = -8/(45*45)*

*a = -6/(45*45)*

Task #3: If we use the boss's equation, what values of "*a*" and "*h*" should give the parabolic shape below?



The boss is out testing sails today, so I'd like you to get this finished before the end of the day and on her desk.