



A new bridge is to be built for foot traffic across a river. The two towers on either end of the bridge are 50 feet high and 300 feet away from each other. The supporting cables (2) are connected at the top of the towers and hang in a curve that appears to form the shape of a parabola. There are vertical cables that connect the walkway to the supporting cables. These cables connect every 15 feet from the walkway up to the supporting cables. At the center of the bridge, the parabola is 5 feet above the walkway. Write an equation for the parabola that represents each of the support cables. Determine the number of vertical cables needed. Determine the length of each of the vertical cables. The shape formed by the hanging cable is not actually a parabola but a shape very similar to one. What is this shape that mimics a parabola? (Hint: The St. Louis Arch also has this shape.)