

Name: _____

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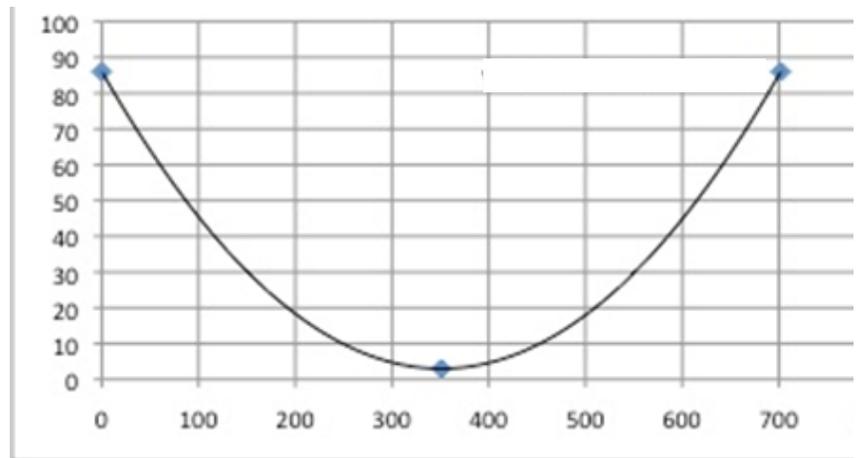
Comparison of Maximums/Minimums Practice

1. Three surveyors are having a discussion about bridges in New York City. The first surveyor collected data from the Verrazano Bridge, he measured the height of the cable as he drove from one end to the other. The second surveyor took a picture of the cable for the Brooklyn Bridge. The last surveyor came up with an equation to model the cable height of the Tappan Zee bridge.

Verrazano Bridge

Horizontal Distance (x)	Height of Cable (y)
0	160
100	114.4
200	77.6
300	49.6
400	30.4
500	20

Brooklyn Bridge



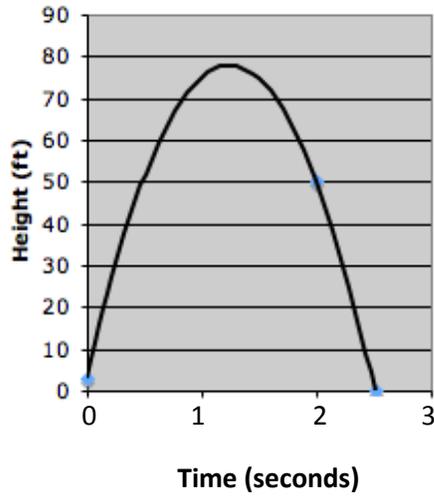
Tappan Zee Bridge

$$y = .00025x^2 - .2x + 100$$

- Using the information, determine the length of each bridge to decide which one is longest and shortest.
- Which bridge's cable gets the closest to the road? How do you know this?
- Analyze the data to determine which bridge a trucker should use if their truck's height is 15 ft. How did you come to this conclusion? Which bridge should he avoid and why?

2. The baseball team has decided to have a throwing contest. Below is the data for 3 different players.

Joe



Michael

$$y = -16x^2 + 50x + 5$$

Henry

Time (x)	Height (y)
.5	37.5
1	63
2	90
3	85

- Whose ball was in the air the longest?
- Who threw their ball the highest?
- If you were to determine the winner of the contest, who would you choose and why?

Answer Key

1. a) Brooklyn bridge is the shortest since it is only 700 ft. long, the Verrazano is longest at 1250 ft. long and the Tappan Zee is 800 feet long.

b) Verrazano's cable is the shortest since it's minimum is only 3.75 ft. high, the Brooklyn bridges' minimum is about 5ft and the Tappan Zee has a minimum of 60ft.

c) He should use the Tappan Zee since he will hit the cables on the other two bridges.

2.a) Henry's ball was in the air the longest since it hit the ground after 4.7 seconds, Michaels' hit the ground after 3.2 seconds and Joe's hit the ground after 2.5 seconds.

b) Henry's ball went the highest since the max was 91.9 ft., Joe's was about 78 ft. and Michael's ball was 44.1 ft. high.

c) Answers may vary: Most students will say Henry since his ball went the highest and was in the air the longest. Some students may choose one of the other players saying maybe they don't want the ball thrown highest if someone else is going to have to catch it.