

MTH 2201 - Test #2

SPRING 2016

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Name _____

Instructions. Show CLEARLY how you arrive at your answers.

1. A theme park rents out its facilities for college graduation parties, provided that at least 500 people are in the party. Park regulations prohibit parties larger than 1500. For the minimum party size of 500 people, tickets cost \$60 per person. The park offers a reduction in ticket price (to all people in the party) of \$0.03 per person for every additional person over the required minimum of 500 party-goers.
 - (a) How many party-goers will maximize the park's revenue?
 - (b) When the park is making maximum revenue, what will the cost per ticket be?
 - (c) How many party-goers will minimize the revenue?

2. $f(x) = 2x^3 - 15x^2 + 36x + 2$ on the interval $[-4, 2]$. Find the absolute maximum value and the absolute minimum value.

3. $f(x) = 2x^3 + 3x^2 - 12x + 3$; determine the intervals on which $f(x)$ is increasing, determine the intervals on which $f(x)$ is decreasing, and identify the local maxes and mins.