YOUR NAME:⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯   George Voutsadakis

Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. A rectangular tent as in the figure, without bottom and without front cover, is to be set up for a commercial gathering. The volume in the interior is to be 3600 cubic feet. If the length of the tent is prescribed to be three times its width, find the dimensions of the tent that require the least amount of canvas.
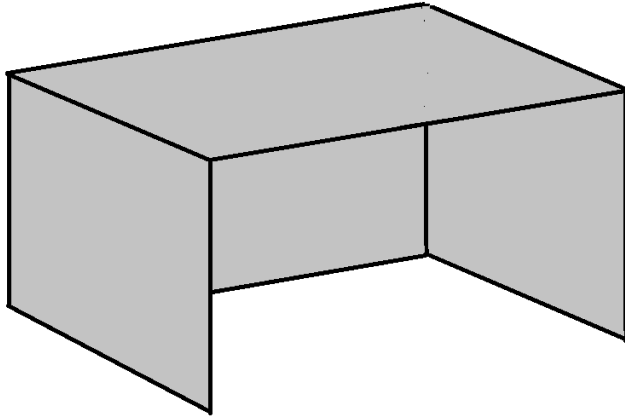
2. Steve and Jane own a tourist shop in St. Ignace. To promote L.S.S.U. and the area, they decided to market the T-shirts shown in the picture. When the price per T-shirt is set at $12, only 20 T-shirts are sold per month. But, being a marketing major, Jane performed market analysis and discovered that each $2 reduction in price would result in 5 more T-shirts being sold per month. Let x be the number of $2 price reductions to be decided upon.

(a) Write an equation for the price:

$p(x) =$

(b) Write an equation for the quantity sold:

$q(x) =$

(c) Write an equation for the revenue:

$R(x) =$

(d) Find the price that should be charged to maximize revenue and the number of T-shirts that should be sold per month for maximum revenue.