Math 2215 - Calculus 1

Exam #5 - 2016.11.14

Name: _____

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1. Compute the area bounded by the three lines $L_1 = \frac{1}{2}x + 1$, $L_2 = x$ and $L_3 = -x$.

2. Consider the region bounded by $f(x) = \sqrt{x-1}$, $g(x) = -\frac{1}{2}x + \frac{1}{2}$, and $x = 5$. Set up, *but do not evaluate*, the integrals required to compute the volume of surface of revolution of this region as follows:

   (a) about $y = -2$ using the washer/disk method
   (b) about $y = -2$ using the method of cylindrical shells
   (c) about $x = 5$ using the washer/disk method
   (d) about $x = 5$ using the method of cylindrical shells
   (e) about $x = -1$ using the washer/disk method
   (f) about $x = -1$ using the method of cylindrical shells

3. Compute *exactly* the arclength of $f(x) = \left(\frac{x}{2}\right)^4 + \frac{1}{2x^2}$ for $x \in [1, 4]$.