**MAT 115 Worksheet 15**
**Tuesday, Nov 21 2017**

**Important info:** Welcome to the MAT 115 workshop! My name is **Diego Avalos** (avalosgalvez@cpp.edu), and I will be your workshop facilitator. We meet on Tuesdays and Thursdays from 4 to 5:50 pm in room 4-1-314. My office hour is on Mondays from 11:30 am to 12:30 pm in room 94-219. All worksheets and solutions may be found at the website **www.diegoavalos.net/teaching/mat115workshop2017**.

1. Find the arclength of the given functions over the specified intervals.
   a. $y = \frac{1}{2}(e^x + e^{-x})$ on $[-\ln 2, \ln 2]$
   b. $y = \frac{1}{3}x^{3/2}$ on $[0, 60]$
   c. $y = 3\ln x - \frac{x^2}{24}$ on $[1, 6]$
   d. $y = \frac{(x^2+2)^{3/2}}{3}$ on $[0, 1]$
   e. $y = \frac{x^4}{4} + \frac{1}{8x^2}$ on $[1, 2]$
2. Find the area of the surface generated when the given curve is revolved about the $x$-axis.
   a. $y = 8\sqrt{x}$ on $[9, 20]$
   b. $y = x^{3/2} - \frac{x^{1/2}}{3}$ on $[1, 2]$
   c. $y = \frac{1}{4}(e^{2x} + e^{-2x})$ on $[-2, 2]$
   d. $y = \sqrt{5x - x^2}$ on $[1, 4]$