Homework #5.

1. Find the arc length of the graph of the function over the indicated interval:

a) $y = \frac{3}{2}x^{2/3}$, $1 \le x \le 8$;

b) $y = \frac{1}{2}(e^x + e^{-x})$, $0 \le x \le 2$;

c) $x = y^5/10 + \frac{1}{6y^3}$, $2 \le y \le 5$.

2. Set up and evaluate the definite integral for the area of the surface generated by revolving the curve about the x or y-axis

a) $y = 2\sqrt{x}$, $4 \le x \le 9$, about x-axis;

b) $y = \frac{x^3}{6} + \frac{1}{2x}$, $1 \le x \le 2$, about x-axis;

c) $y = \frac{x}{2} + 3$, $1 \le x \le 5$, about y-axis.

d) $y = \frac{x}{2} + 3$, $1 \le x \le 5$, about $x = -2$.