## **Review Problems**

February 24, 2017

- 1. (Fall 2008, Exam 2, #7) Which integral represents the area of the surface obtained by revolving the curve  $y = 2\sqrt{x}$  from (0,0) to (1,2) about the x-axis?
- 2. (Fall 2008, Exam 2, #8) Compute the length of  $y = \frac{2}{3}(1+x)^{3/2}$  from (0, 2/3) to (2, 2/sqrt3).
- 3. (Fall 2009, Exam 2, #7) Find the length of the curve  $f(x) = \ln(\sec x)$ ,  $0 \le x \le \pi/3$ .
- 4. (Fall 2009, Exam 2, #8) A surface is generated by rotating the curve  $y = 2\sqrt{1+x}$ ,  $0 \le x \le 2$ , about the *x*-axis. Find the surface area of the surface.
- 5. (Fall 2009, Exam 2, #10) The curve  $y = e^x$ ,  $0 \le x \le 2$ , is rotated about the y-axis. Which integral gives the surface area of the surface of revolution?
- 6. (Fall 2010, Exam 2, #10) Find the arclength of the curve  $y = \frac{2}{3}(x+1)^{3/2}$ ,  $-1 \le x \le 2$ .
- 7. (Fall 2010, Exam 2, #11) Which integral gives the surface area of the surface obtained by rotating the curve  $y = 1 + 2x^2$ ,  $0 \le x \le 1$  about the *y*-axis?