

Solutions to Week in Review 7

1.  $\frac{1}{3}\left(\frac{17\sqrt{17}}{8} - 8\right)$

2.  $\ln(\sqrt{2} + 1)$

3. 14

4. a.)  $\frac{\pi}{27}(145\sqrt{145} - 1)$

b.)  $\frac{\pi}{6}(65\sqrt{65} - 5\sqrt{5})$

c.)  $\frac{\pi}{6}(5\sqrt{5} - 1)$

d.)  $\frac{\pi}{6}(17\sqrt{17} - 5\sqrt{5})$

e.)  $dy: \int_0^{1/2} 2\pi e^{2y} \sqrt{1 + 4e^{4y}} dy, \quad dx: \int_1^e 2\pi x \sqrt{1 + \frac{1}{4x^2}} dx$

f.)  $2\pi$  for both revolutions.

5.  $\frac{37}{22}$

Note: On the answers below, I went ahead and gave both the  $x$  and  $y$  coordinate.

6.  $\left(5, \frac{-15}{11}\right)$

7.  $\left(\frac{e^2 + 1}{2e^2 - 2}, \frac{e^4 - 1}{4e^2 - 4}\right)$

8.  $\left(\frac{4}{\pi}, \frac{4}{\pi}\right)$

9.  $\left(1, \frac{8}{5}\right)$