

Solutions to Week in Review 6

1. $L = \frac{-2}{27} + \frac{13\sqrt{13}}{108}$

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

3. 14

4. $L = e^2 - \frac{7}{8}$

5. a.) $\frac{\pi}{54}(37\sqrt{37} - 1)$

b.) $\frac{\pi}{6}(37\sqrt{37} - 1)$

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

d.) $\frac{8\pi}{3}(2\sqrt{2} - 1)$

e.) $dy: \int_0^2 2\pi \ln(3y + 1) \sqrt{1 + \frac{9}{(3y + 1)^2}} dy, \quad dx: \int_0^{\ln 7} 2\pi x \sqrt{1 + \frac{1}{9}e^{2x}} dx$

f.) 20π

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

7. $(\frac{2e^3 + 1}{e^3 - 1}, \frac{1/4e^6 - 1/4}{e^3 - 1})$

8. $(2, \frac{32}{5})$