

Answers to Week in Review 2

1. $\frac{\pi}{2}(e^2 - 1)$

2. 24π

3. x -axis revolution: $\frac{2048\pi}{15}$

y -axis revolution: $\frac{128\pi}{3}$

4. $\frac{512\pi}{15}$

5. $\frac{8\pi}{15}$

6. $\frac{7\pi}{15}$

7. $8\sqrt{3}$

8. $\frac{\pi}{2}$

9. $\frac{64}{3}$

10. a.) $2\pi \ln 2$

b.) $\frac{4096\pi}{5}$

c.) x -axis revolution: $V = \frac{162\pi}{5}$

y -axis revolution: $V = \frac{27\pi}{2}$

d.) $\frac{199\pi}{10}$

e.) 24π

f.) Revolution around $y = 1$: $\int_0^1 2\pi(1 - y)(\arccos y) dy$

Revolution around $x = \frac{\pi}{2}$: $\int_0^{\frac{\pi}{2}} 2\pi(\frac{\pi}{2} - x)(\cos x) dx$

g.) $\int_1^4 2\pi x \ln x dx$

h.) $\frac{5\pi}{6}$