

$$(13) y = \sqrt{5+x^2}, y=0, x=0, x=2$$

$$V = 2\pi \int_0^2 x \sqrt{5+x^2} dx$$

$$V = 2\pi \times \frac{2}{3} (5 \cdot \sqrt{5} - 27) \cdot \pi$$

$$V = \frac{-2(5\sqrt{5} - 27)\pi}{3}$$

$$V = 10.5465\pi \approx 33.1326$$

$$(15) xy=1, x=0, y=1, y=3$$

$$y = \frac{1}{x}$$

$$V = 2\pi \int_1^3 y f(y) dy$$

$$V = 2\pi \int_1^3 \frac{1}{x} \cdot x dx$$

$$V = 2\pi \int_1^3 1 dx$$

$$V = 2\pi \cdot 2 = 4\pi$$

$$(17) y = x^{3/2}, y=8, x=0$$

$$V = 2\pi \cdot \frac{3}{8} \cdot 256$$

$$V = 2\pi \int_0^8 y \cdot y^{2/3} dy$$

$$V = 192\pi$$

$$V = 2\pi \int_0^8 y^{5/3} dy$$

$$V = 2\pi \left[\frac{3}{8} y^{8/3} \right]_0^8$$