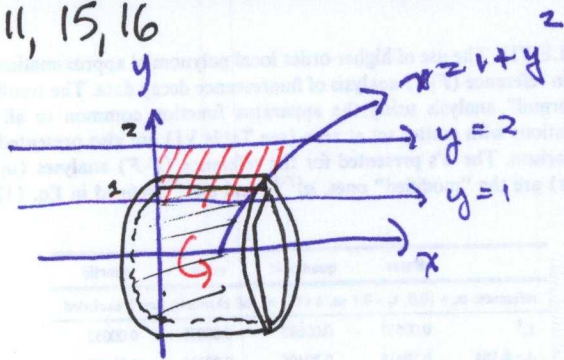


3: 9, 11, 15, 16



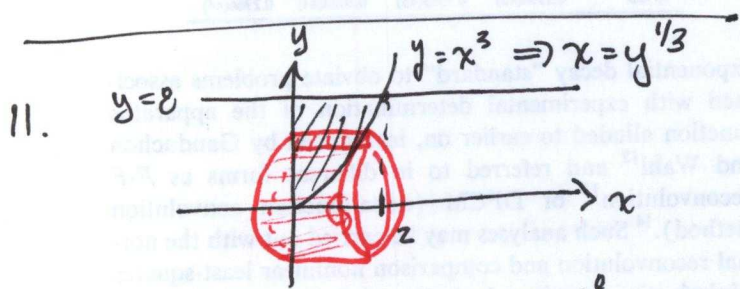
$$V = 2\pi \int_1^2 y(1+y^2) dy$$

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

$$= 2\pi \left(\frac{y^2}{2} + \frac{y^4}{4} \right) \Big|_1^2$$

$$= 2\pi \left(2 + 4 - \frac{1}{2} - \frac{1}{4} \right)$$

$$= 2\pi \left(6 - \frac{3}{4} \right) = 2\pi \left(\frac{24-3}{4} \right) = \frac{21}{2}\pi$$



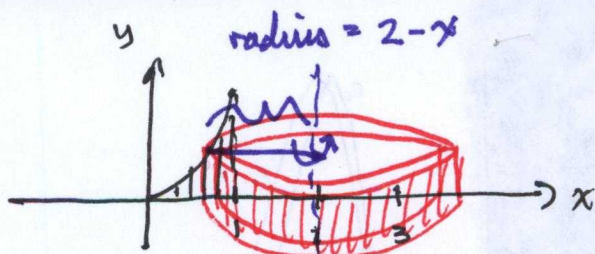
$$V = 2\pi \int_0^8 y \cdot y^{1/3} dy = 2\pi \int_0^8 y^{4/3} dy$$

~~$$= 2\pi \cdot \frac{3}{7} y^{7/3} \Big|_0^8 = 2\pi \cdot \frac{3}{7} \cdot 2^7$$~~

$$= 2\pi \cdot \frac{3}{7} y^{7/3} \Big|_0^8$$

$$= \frac{6\pi}{7} \cdot 2^7 = 128 \left(\frac{6\pi}{7} \right)$$

15.



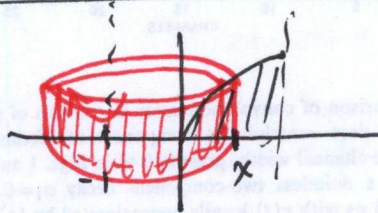
$$V = \int_0^1 (2-x)x^4 dx$$

$$= \int_0^1 (2x^4 - x^5) dx$$

$$= \left(\frac{2}{5}x^5 - \frac{x^6}{6} \right) \Big|_0^1 = \frac{2}{5} - \frac{1}{6}$$

$$= \frac{7}{30}$$

16.



$$V = \int_0^1 (x+1)\sqrt{x} dx$$

$$= \int_0^1 (x^{3/2} + x^{1/2}) dx$$

$$= \left(\frac{2}{5}x^{5/2} + \frac{2}{3}x^{3/2} \right) \Big|_0^1$$

$$= \frac{2}{5} + \frac{2}{3}$$

$$= \frac{16}{15}$$