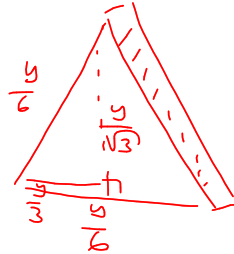
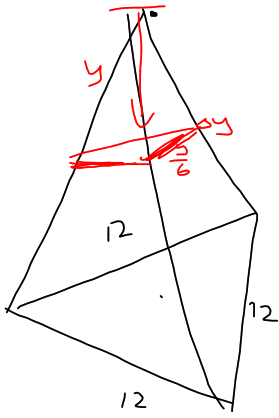
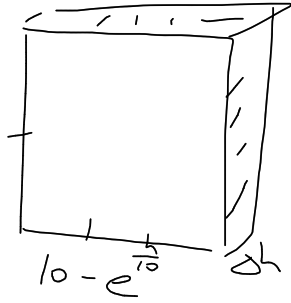


2/

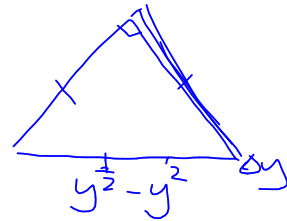
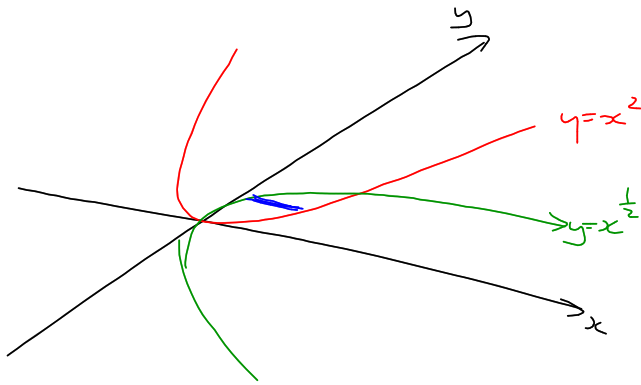


$$\begin{aligned} A &= \frac{1}{2} \left( \frac{12}{2} \right) \left( \frac{15}{6} \right) \sin 60^\circ \\ &= \frac{42}{2} \times \frac{\sqrt{3}}{2} \end{aligned}$$

3/

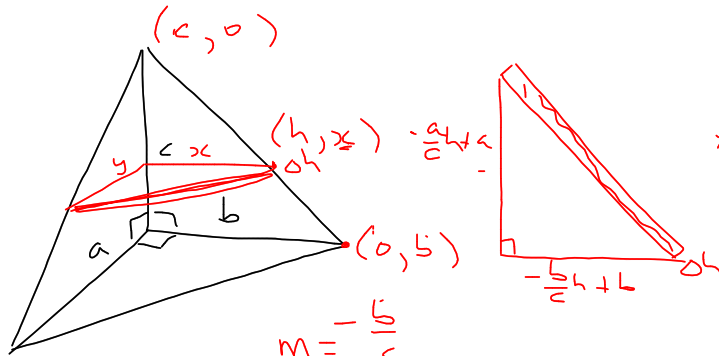


8/



$$A(x) = \frac{1}{2} x^{\frac{1}{2}} (y^{\frac{1}{2}} - y^2)^2$$
$$\Delta V = \frac{1}{4} (y - 2y^{\frac{5}{2}} + y^4) \Delta y$$

10/



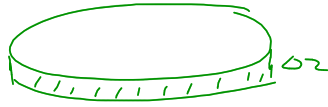
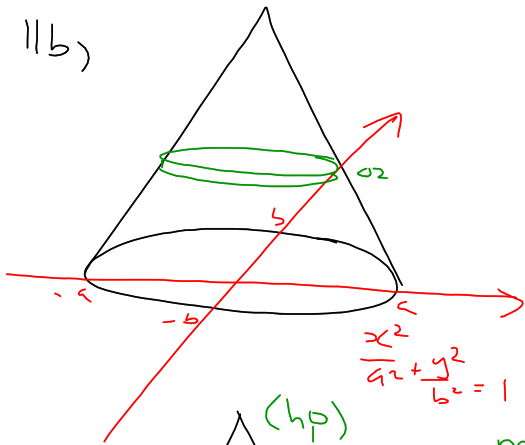
$$A(h) = \frac{1}{2} \left( -\frac{b}{c}h + b \right) \left( -\frac{a}{c}h + a \right)$$

$$m = -\frac{b}{c}$$

$$x - 0 = -\frac{b}{c}(h - c)$$

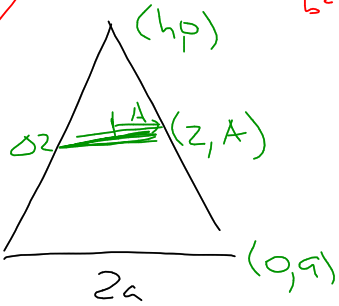
$$x = -\frac{b}{c}h + b$$

11b)



$$A(z) = \pi AB$$

$$\therefore B = -\frac{b}{h}z + b$$



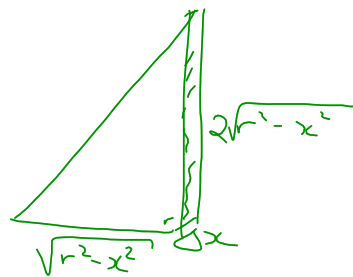
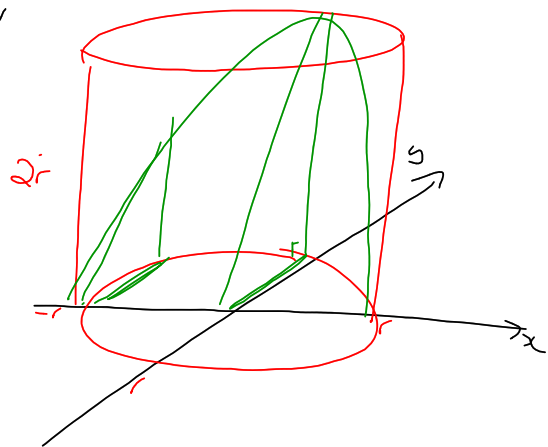
$$m = \frac{a-0}{0-h}$$

$$= -\frac{a}{h}$$

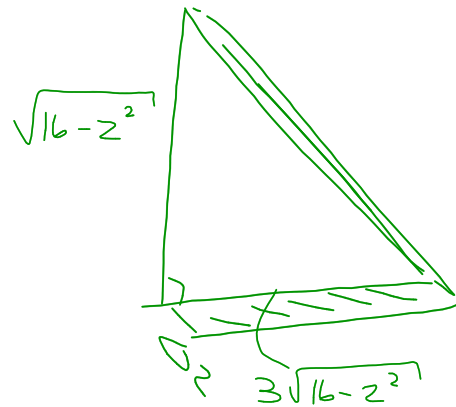
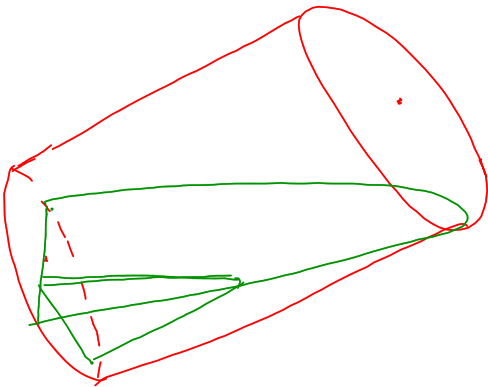
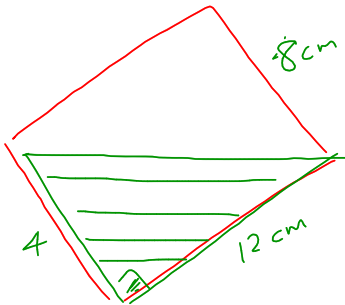
$$A-0 = -\frac{a}{h}(z-h)$$

$$\underline{A = -\frac{a}{h}z + a}$$

12/



13/



$$A(z) = \frac{1}{2} \times 3\sqrt{16-z^2} \times \sqrt{16-z^2}$$

$$\Delta V = \frac{3}{2}(16-z^2) \Delta z$$

$$V = \lim_{\Delta z \rightarrow 0} \sum_{z=0}^4 \frac{3}{2}(16-z^2) \Delta z$$

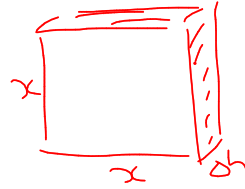
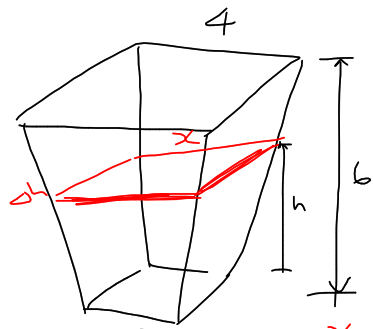
$$= 3 \int_0^4 (16-z^2) dz$$

$$= 3 \left[ 16z - \frac{1}{3}z^3 \right]_0^4$$

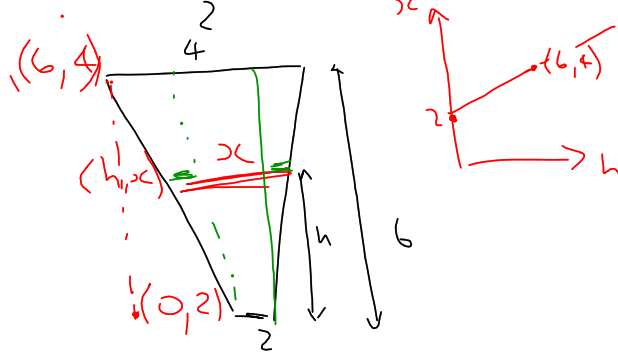
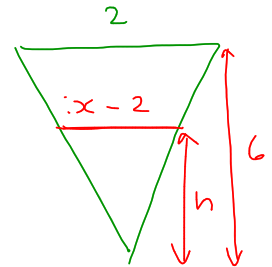
$$= 3 \left( 64 - \frac{64}{3} \right)$$

$$= \underline{\underline{128 \text{ units}^3}}$$

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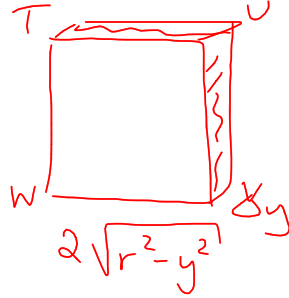
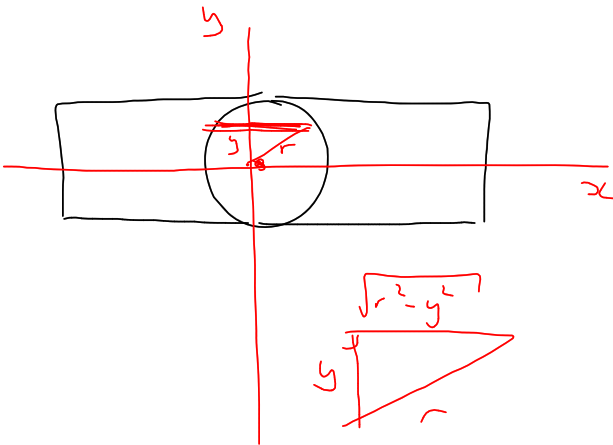
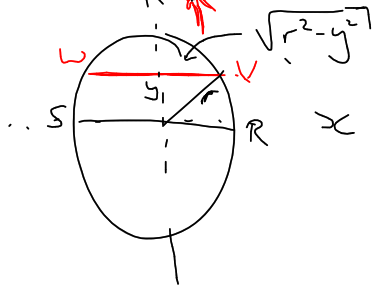
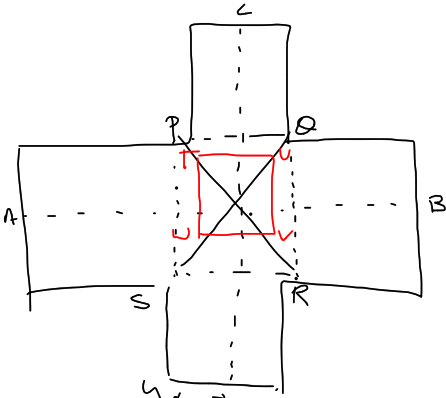


$$A(h) = x^2$$

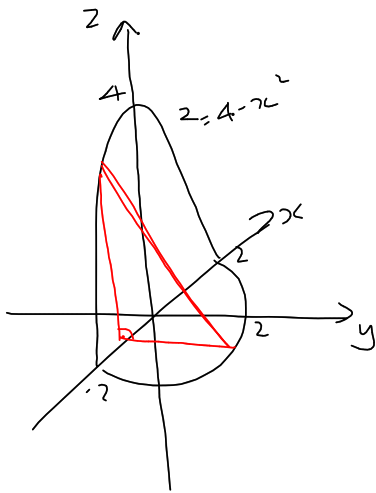




16/

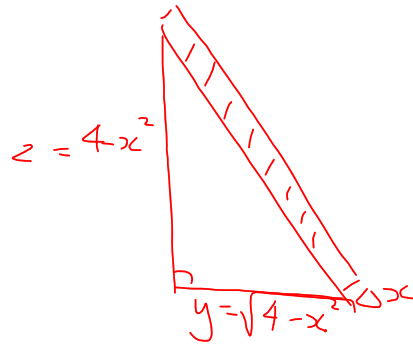


17



$$x = 2 \sin \theta$$

$$dx = 2 \cos \theta d\theta$$



$$A(x) = \frac{1}{2} (4 - x^2) \sqrt{4 - x^2}$$

$$\Delta V = \frac{1}{2} (4 - x^2) \sqrt{4 - x^2} \Delta x$$

$$V = \lim_{\Delta x \rightarrow 0} \sum_{x=-2}^2 \frac{1}{2} (4 - x^2) \sqrt{4 - x^2} \Delta x$$

$$= \int_{-2}^2 (4 - x^2) \sqrt{4 - x^2} dx$$

$$= 4 \int_0^2 \sqrt{4 - x^2} dx - \int_0^2 x^2 \sqrt{4 - x^2} dx$$

$$= \pi(2)^2 - \int_0^{\pi/2} 4 \sin^2 \theta \cdot 2 \cos \theta \cdot 2 \cos \theta d\theta$$

$$= 4\pi - 16 \int_0^{\pi/2} \sin^2 \theta \cos^2 \theta d\theta$$

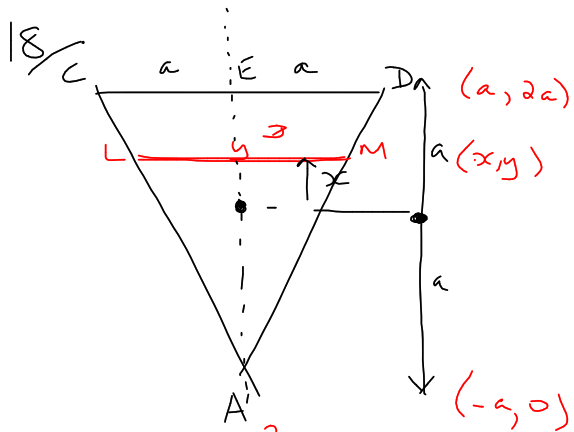
$$= 4\pi - 4 \int_0^{\pi/2} \sin^2 2\theta d\theta$$

$$= 4\pi - 2 \int_0^{\pi/2} (1 - \cos 4\theta) d\theta$$

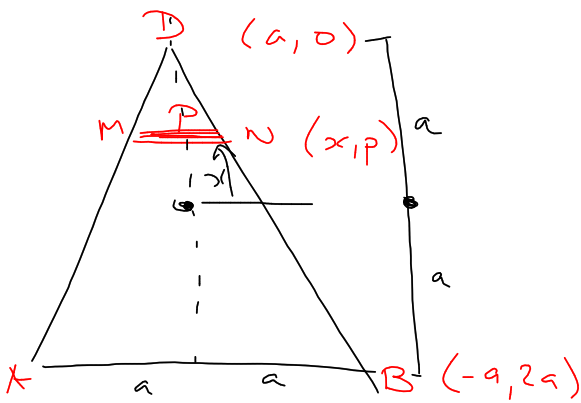
$$= 4\pi - 2 \left[ \theta - \frac{1}{4} \sin 4\theta \right]_0^{\pi/2}$$

$$= 4\pi - \pi$$

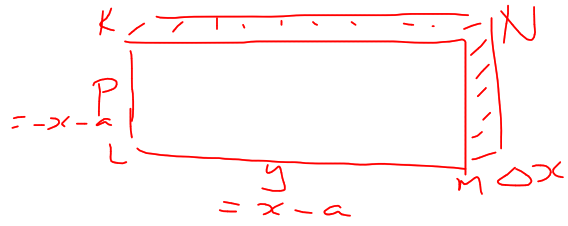
$$= \underline{\underline{3\pi \text{ units}^3}}$$



$$m = \frac{2a}{2a} = 1 \quad \underline{y = x + a}$$



$$m' = \frac{2a}{-2a} = -1 \quad p = -x - a$$



$$A(x) = (x - a)(-x - a) = a^2 - x^2$$

$$\Delta V = a^2 - x^2 \cdot \Delta x$$

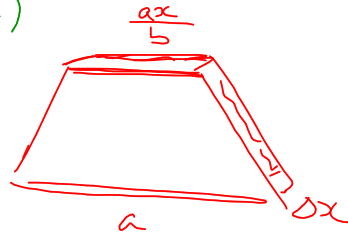
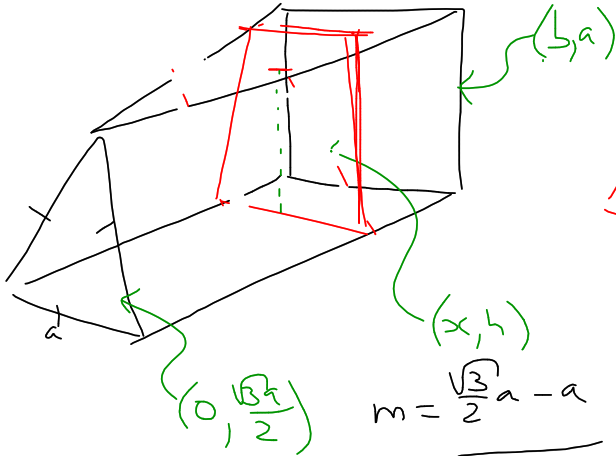
$$V = \lim_{\Delta x \rightarrow 0} \sum_{x=-a}^a (a^2 - x^2) \Delta x$$

$$= 2 \int_0^a (a^2 - x^2) dx$$

$$= 2 \left[ a^2 x - \frac{1}{3} x^3 \right]_0^a$$

$$= \underline{\underline{\frac{4}{3} a^3 \text{ units}^3}}$$

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$$m = \frac{\frac{\sqrt{3}}{2}a - a}{0 - b}$$

$$= \frac{(\sqrt{3} - 2)a}{-2b}$$

$$h - a = \frac{(2 - \sqrt{3})a}{2b} (x - b)$$

$$h = \frac{(2 - \sqrt{3})a}{2b} (x - b) + a$$

$$= \frac{a}{2} \left[ \frac{(2 - \sqrt{3})x}{b} - (2 - \sqrt{3}) + 2 \right]$$