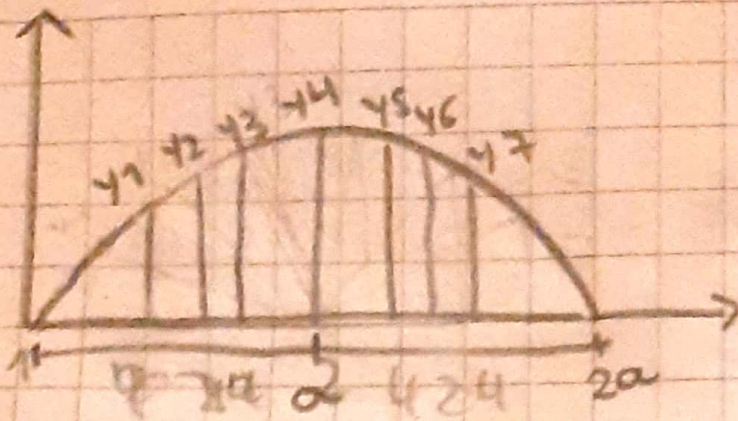




$$A = \int_0^{2a} y \, dx$$

$$\Delta x = \frac{2a}{8} = \frac{a}{4}$$

$$a^2 = y_1^2 \cdot (a - \Delta x)^2$$

$$y_1 = \sqrt{a^2 - \left(\frac{3a}{4}\right)^2}$$

$$y_1 = \sqrt{a^2 - \frac{9}{16}a^2}$$

$$y_1 = \sqrt{a^2 \left(1 - \frac{9}{16}\right)}$$

$$y_1 = a \sqrt{\frac{7}{16}}$$

$$y_1 = \frac{a}{4} \sqrt{7}$$

$$y_2 = \sqrt{a^2 - \left(a - \frac{a}{2}\right)^2}$$

$$y_2 = \sqrt{a^2 - \left(\frac{1}{2}\right)^2 a^2}$$

$$y_2 = \sqrt{a^2 - \frac{1}{4}a^2}$$

$$y_2 = \frac{a}{2} \sqrt{3}$$

$$a - \frac{3}{4}a$$

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$$a^2 = \left(\frac{a}{4}\right)^2 + (a - \Delta x)^2$$

$$y_3 = \sqrt{a^2 - \left(\frac{a}{4}\right)^2}$$

$$y_3 = \sqrt{a^2 - \frac{a^2}{16}}$$

$$y_3 = a \sqrt{\frac{15}{16}}$$

$$y_3 = \frac{a}{4} \sqrt{15}$$

$$y_4 = \sqrt{a^2 - a^2}$$

$$y_4 = a$$

$$\rightarrow y_1 = y_7 ; y_2 = y_6 ; y_3 = y_5$$

$$\therefore y_1 = \frac{a}{4} \sqrt{7}$$

$$y_3 = \frac{a}{4} \sqrt{15}$$

$$y_5 = \frac{a}{4} \sqrt{15}$$

$$y_2 = \frac{a}{2} \cdot \sqrt{3}$$

$$y_4 = a$$

$$y_6 = \frac{a}{2} \cdot \sqrt{3}$$

$$y_7 = \frac{a}{4} \sqrt{7}$$

RHEIN

Luego:

$$\frac{1}{3} \cdot \frac{a}{4} \left(4 \cdot \frac{a}{4} \sqrt{7} + 2 \cdot \frac{a}{2} \cdot \sqrt{3} + 4 \cdot \frac{a}{4} \sqrt{15} + 2a + 4 \cdot \frac{a}{4} \sqrt{15} + 2 \cdot \frac{a}{2} \cdot \sqrt{3} + 4 \cdot \frac{a}{4} \sqrt{7} \right)$$

$$\frac{a}{12} \left[a \left(\sqrt{7} + \sqrt{3} + \sqrt{15} + 2 + \sqrt{15} + \sqrt{3} + \sqrt{7} \right) \right]$$

$$\frac{a^2}{12} (18,501)$$

$$= 1,541 a^2$$

$$A = \frac{\pi R^2}{2} = \frac{\pi \cdot a^2}{2} = 1,57 a^2$$

$$\% \frac{1,57 a^2 - 1,541 a^2}{1,57 a^2} \cdot 100 = 0,7,84 \%$$