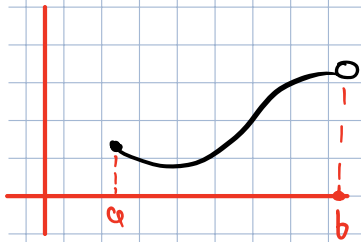


Integral - Impropias

Byte Planet

$$\int_0^2 \frac{1}{\sqrt{4-x^2}} dx = \lim_{\epsilon \rightarrow 0} \int_0^{2-\epsilon} \frac{dx}{\sqrt{4-x^2}}$$

2) Cuando f no es continua en el extremo superior



$$\rightarrow \int_a^b f(x) dx = \lim_{\epsilon \rightarrow 0} \int_a^{b-\epsilon} f(x) dx$$

$$= \lim_{\epsilon \rightarrow 0} \arcsen\left(\frac{x}{2}\right) \Big|_0^{2-\epsilon} \quad \text{where } 2-\epsilon = b \text{ and } 0 = a$$

$$* \int \frac{du}{\sqrt{a^2-u^2}} = \arcsen\left(\frac{u}{a}\right) + C$$

$$= \lim_{\epsilon \rightarrow 0} \left[\arcsen\left(\frac{2-\epsilon}{2}\right) - \arcsen\left(\frac{0}{2}\right) \right]$$

$$= \arcsen\left(\frac{2-0}{2}\right) - \arcsen(0)$$

$$= \arcsen\left(\frac{2}{2}\right) - 0$$

$$= \arcsen(1) - 0 = \frac{\pi}{2} - 0 = \frac{\pi}{2}$$

\therefore Converge en $\frac{\pi}{2}$