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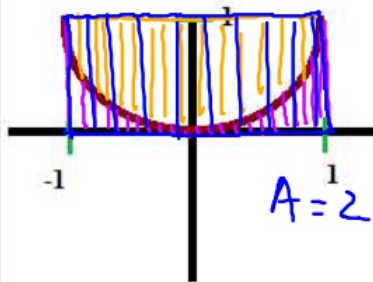
$$\text{Avg Value} = \frac{\int_a^b f(x)}{b-a} = \frac{\text{Area}}{\Delta x}$$

~~$\int 1 - \sqrt{1-x^2}$~~

Find the average value of the function without integrating.

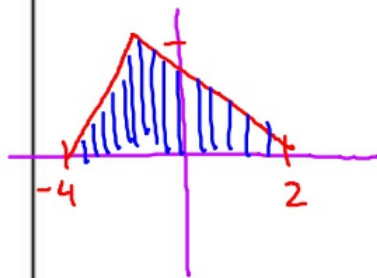
16.  $f(x) = 1 - \sqrt{1-x^2}$

$$A = \frac{\pi(1)^2}{2} = \frac{\pi}{2}$$



$$\text{Avg Value} = \frac{\int_{-1}^1 f(x)}{1 - (-1)}$$

$$\text{Avg Value} = \frac{2 - \frac{\pi}{2}}{2}$$



32.  $y = \frac{1}{x}$   $[e, 2e]$

$$\text{Avg Value} = \frac{\int_e^{2e} \frac{1}{x}}{2e - e} = \frac{\ln x \Big|_e^{2e}}{e} = \frac{\ln 2e - \ln e}{e}$$

$$\text{Avg Value} = \frac{\ln(2e) - 1}{e}$$