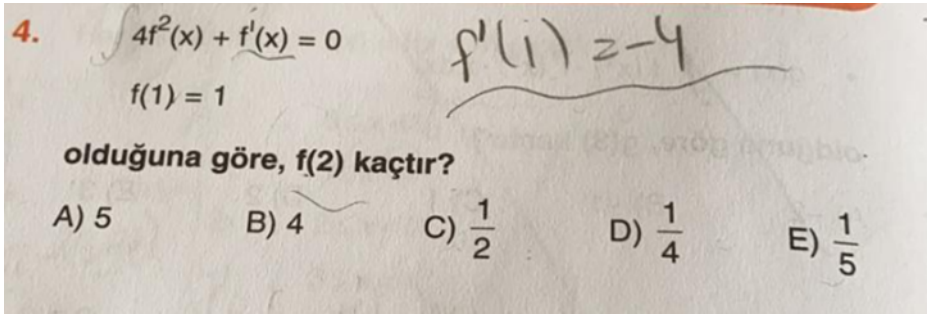

4. $4f^2(x) + f'(x) = 0$

$f(1) = 1$

olduğuna göre, f(2) kaçtır?

A) 5 B) 4 C) $\frac{1}{2}$ D) $\frac{1}{4}$ E) $\frac{1}{5}$

$f'(1) = -4$

$4 \cdot f^2(x) = -f'(x)$

$\int -\frac{f'(x)}{f^2(x)} = \int 4 \Rightarrow \frac{1}{f(x)} + C_1 = 4x + C_2$

$-\int \frac{f'(x)}{f^2(x)} \cdot dx = -\int \frac{1}{u^2} \cdot du$

$f(x) = u$

$f'(x) \cdot dx = du$

$= -\int u^{-2} du$

$= -\frac{u^{-1}}{-1} + C_1$

$= \frac{1}{u} + C_1$

$= \frac{1}{f(x)} + C_1$

$\frac{1}{f(x)} = 4x + C$

$x = 1 \Rightarrow \frac{1}{f(1)} = 4 + C \Rightarrow 1 = 4 + C$

$C = -3$

$\frac{1}{f(x)} = 4x - 3$

$f(x) = \frac{1}{4x-3}$

$f(2) = \frac{1}{8-3} = \frac{1}{5}$