

Quiz #1
Solution

(27 Aug 2009)

Let $f(x) = \frac{1}{x}$.

Then
$$\begin{aligned} \frac{f(x) - f(2)}{x - 2} &= \frac{\frac{1}{x} - \frac{1}{2}}{x - 2} \\ &= \frac{\frac{2}{2x} - \frac{x}{2x}}{x - 2} \\ &= \frac{\frac{2-x}{2x}}{x-2} \\ &= \frac{2-x}{2x} \cdot \frac{1}{x-2} \\ &= \frac{-1}{2x}. \end{aligned}$$