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VI

$$y = \frac{x^2}{x-2}$$

$$\mathcal{D}(f): (-\infty; 2) \cup (2; +\infty)$$

$$\lim_{x \rightarrow 2+0} \frac{x^2}{x-2} = \lim_{\varepsilon \rightarrow 0} \frac{(\varepsilon+2)^2}{\varepsilon} = \lim_{\varepsilon \rightarrow 0} \frac{\varepsilon^2 + 4\varepsilon + 4}{\varepsilon} = \lim_{\varepsilon \rightarrow 0} \varepsilon + 4 + \frac{4}{\varepsilon} =$$

$$= \infty$$

$$\lim_{x \rightarrow 2-0} \frac{x^2}{x-2} = \lim_{\varepsilon \rightarrow 0} \frac{(\varepsilon+2)^2}{-\varepsilon} = \lim_{\varepsilon \rightarrow 0} -\varepsilon + 4 - \frac{4}{\varepsilon} = -\infty$$

Therefore, $x=2$ - vertical asymptote
Hence, it is infinite discontinuity at $x=2$.