

$$\lim_{h \rightarrow 0} \frac{\frac{2}{2+h} - \frac{1}{2}}{h}$$

$$\frac{1 - \frac{2+h}{2}}{h(2+h)}$$

$$\frac{2 - (2+h)}{h \cdot 2 \cdot (2+h)} = \frac{-h}{2h(2+h)}$$

$$-\frac{1}{4}$$

$$\begin{aligned} \lim_{x \rightarrow 36} \frac{f - \sqrt{36}}{24 - 36} &= \frac{f - 6}{-12} = \frac{2}{-12} \\ &= -\frac{1}{6} \end{aligned}$$

$$\lim_{x \rightarrow \frac{\pi}{4}} \frac{\sin 2x}{\csc x}$$

$$\frac{\sin\left(2 \cdot \frac{\pi}{4}\right)}{\frac{1}{\sin \frac{\pi}{4}}}$$

$$= \frac{\sin \frac{\pi}{2}}{\frac{1}{\frac{1}{\sqrt{2}}}} =$$

$$\frac{1}{\sqrt{2}}$$

$$\frac{1}{\sqrt{2}}$$

$$\frac{\sqrt{2}}{2}$$

$$1.414 \overline{) 1}$$

$$2 \overline{) 1.414}$$