

$$\begin{array}{llll}
 \text{1a)} & \lim_{x \rightarrow 1} \cos \frac{\pi x}{3} & \text{1b)} & \lim_{x \rightarrow 0} \sec 2x & \text{1c)} & \lim_{x \rightarrow 3} \tan\left(\frac{\pi x}{4}\right) & \text{1d)} & \lim_{x \rightarrow 2} \cot\left(\frac{3\pi}{2}x\right) \\
 & = \cos \frac{\pi}{3} = \frac{1}{2} & & & & & & 
 \end{array}$$

$$\begin{array}{llll}
 \text{2a)} & \lim_{x \rightarrow 0} \frac{\sin x}{5x} & \text{2b)} & \lim_{x \rightarrow 0} \frac{\sin x(1 - \cos x)}{x^2} & \text{2c)} & \lim_{x \rightarrow 0} \frac{\sin^2 x}{x} & \text{2d)} & \lim_{x \rightarrow 0} \frac{2x}{3\sin 3x} \\
 & = \lim_{x \rightarrow 0} \left[ \left( \frac{\sin x}{x} \right) \left( \frac{1}{5} \right) \right] & & & & & & \\
 & = (1) \left( \frac{1}{5} \right) = \frac{1}{5} & & & & & & 
 \end{array}$$

$$\begin{array}{lll}
 \text{2e)} & \lim_{x \rightarrow \pi/2} \frac{\cos x}{\cot x} & \text{2f)} & \lim_{h \rightarrow 0} \frac{(1 - \cos h)^2}{h} & \text{2g)} & \lim_{t \rightarrow 0} \frac{\sin 3t}{2t}
 \end{array}$$

$$\text{2g)} \quad \lim_{x \rightarrow \pi/4} \frac{1 - \tan x}{\sin x - \cos x}$$