

$$5b) \lim_{y \rightarrow 0} \frac{\tan 3y}{\tan 2y}$$

$$= \lim_{y \rightarrow 0} \frac{\sin 3y}{\sin 2y} \times \frac{\cos 2y}{\cos 3y}$$

$$= \lim_{y \rightarrow 0} \frac{3 \sin 3y}{2} \times \frac{2y}{\sin 2y} \times \frac{\cos 2y}{\cos 3y}$$

$$= \underline{\underline{\frac{3}{2}}}$$

$$\begin{aligned}\lim_{y \rightarrow 0} \frac{\tan 3y}{\tan 2y} &= \lim_{y \rightarrow 0} \frac{3 \sec^2 3y}{2 \sec^2 2y} \\ &= \frac{3}{2}\end{aligned}$$

$$\begin{aligned} 5c) \quad & \lim_{t \rightarrow 0} \frac{\sin 5t}{\tan 7t} \\ &= \lim_{t \rightarrow 0} \frac{5}{7} \times \frac{\sin 5t}{5t} \times \frac{7t}{\sin 7t} \times \cos 7t \\ &= \frac{5}{7} \end{aligned}$$