



Subject : \_\_\_\_\_  
Date \_\_\_\_\_

« بن نام خدا »

$$\lim_{x \rightarrow \pi} \frac{1 + \cos^2 x}{\sin^2 x} = \lim_{x \rightarrow \pi} \frac{(1 + \cos x)(1 + \cos^2 x - \cos x)}{(1 - \cos x)(1 + \cos x)} = \frac{2}{2} \quad \text{9) } \frac{0}{0} (1)$$

$$\lim_{x \rightarrow \frac{\pi}{2}} \frac{1 - \tan x}{\sin x - \cos x} = \lim_{x \rightarrow \frac{\pi}{2}} \frac{-\cos x - \sin x}{\sin x - \cos x} = \lim_{x \rightarrow \frac{\pi}{2}} \frac{-1}{\cos x} = -\sqrt{2} \quad \text{9) } \frac{0}{0} (4)$$

$$\lim_{x \rightarrow \frac{\pi}{4}} \frac{\tan^2 x - 1}{\cos^2 x} = \lim_{x \rightarrow \frac{\pi}{4}} \frac{\sin^2 x - \cos^2 x}{\cos^2 x - \sin^2 x} = \lim_{x \rightarrow \frac{\pi}{4}} \frac{-1}{\cos^2 x} = -\sqrt{2} \quad \text{9) } \frac{0}{0} (10)$$