

**1993 Paper 2 Question 1**

Evaluate

a.  $\lim_{x \rightarrow \frac{\pi}{2}} \frac{x - \frac{\pi}{2}}{\cos x}.$

b.  $\lim_{x \rightarrow 0} \frac{(1+mx)^n - (1+nx)^m}{x^2},$  where  $m, n \geq 2.$