1. (10 pts) Car A is traveling west at 50 \text{ mi/h} and car B is traveling north at 60 \text{ mi/h}. Both cars are headed for the intersection of the two roads. At what rate are the cars approaching each other when car A is 0.3 mi and car B is 0.4 mi from the intersection?

sol: See textbook p 130.

2. (10 pts) Find the linearization \( L(x) \) of the function \( f(x) = \cos x \) at \( a = \frac{\pi}{2} \)

sol: \( L(x) = \cos \frac{\pi}{2} - \sin \frac{\pi}{2} \cdot (x - \frac{\pi}{2}) = -x + \frac{\pi}{2} \)