MAC 2311 Hybrid Calculus I (B)

Name Quiz # 6 (3.9-3.11) Take Home. Show all work.

 2. A ladder 10 ft long rests against a vertical wall. If the bottom of the ladder slides away from the wall at a rate of 2 ft/s, how fast is the top of the ladder sliding down the wall when the bottom of the ladder is 6 ft from the wall?

2. Find the linearization *L*(*x*) of $f\left(x\right)=ln⁡(1+x)$ at *x =* 0

3. Approximate the change in the volume of a sphere when the radius changes from *r*=5 to *r*=5.1 ($V=\frac{4}{3}πr^{3}$).

Find the maximum and relative error

4. Find the derivative of $x^{2}e^{coshx^{2}}$

5. Prove that *cosh* (*x*) + *sinh* (*x*) = *ex*