

King Fahd University of Petroleum and Minerals  
Math. & Stat. Department  
163-Math 101 Quiz (3)

Name	ID	SEC 12
------	----	--------

Q1) If  $f(x) = \frac{g(x^2h(x))}{x^3}$ ,  $h'(2) = -1$ ,  $h(2) = 1$ ,  $g(4) = 8$  find the slope of the normal line to the curve  $f(x)$  at  $x = 2$ .

---

Q2) Find the tangent line to  $f(x) = \frac{\sin x}{1 - \cos x}$  at  $x = 3\pi$ .

---

Q3) If  $f(x) = |x-1| + |x+2|$ , find  $f'(0) + f'(3) + f'(-4)$ .

Q4) Find all  $x \in (0, \pi/2)$  at which  $f(x) = \sec x + \csc x$  has horizontal tangent line.