

Math 101 (Term 173) – Quiz 3

Student Name _____ Student ID: _____

Exercise 1 [4 points]

Find $\lim_{x \rightarrow 0} \frac{\sin 3x \sin x^2}{x^3 \tan 5x} =$

Exercise 2 [4 points]

Let $f(x) = |x - 1| + |x + 2|$.

1. $f'_-(1) =$

2. $f'_+(1) =$

3. $f'_-(-2) =$

4. $f'_+(-2) =$

5. [2 points] $f'(x) = \begin{cases} \dots\dots\dots & ; & \dots\dots\dots \\ \dots\dots\dots & ; & \dots\dots\dots \\ \dots\dots\dots & ; & \dots\dots\dots \end{cases}$

Exercise 3 [2 points]

Let $f(x) = xg(x^2)$, with g' and g'' exist for all x .

1. $f'(x) =$

2. $f''(x) =$