Name_____ Calculators OK. Present neatly. Score_____.

1.Numerically investigate the given limit. If it does not exist, please write so.

$$\lim_{x\to 0}\frac{1-\cos x}{2x}$$

Your answer should include a neat two-table column with at least six rows.

2. True or False? Explain.

> If $\lim_{x\to a} f(x)$ exists, then so do $\lim_{x\to a^-} f(x)$ and $\lim_{x\to a^+} f(x)$.

3. Prove the identity.

$$\frac{2\tan x}{1+\tan^2 x} = \sin 2x$$

Your work:

Name_____ Calculators OK. Present neatly. Score_____.

1.Numerically investigate the given limit. If it does not exist, please write so.

$$\lim_{x \to 0} \frac{\sin^{-1} 3x}{5x}$$

Your answer should include a neat two-table column with at least six rows.

2. True or False? Explain.

If $\lim_{x \to a^-} f(x)$ and $\lim_{x \to a^+} f(x)$ exist, then so does $\lim_{x \to a} f(x)$.

3.

If $f(x) = x^2 + 2x - 1$ and $g(x) = 2x - 3$, find each of the following functions.

(a) $f \circ g$ (b) $g \circ f$ (c) $g \circ g \circ g$

Your work: