

Name: _____

Written Assignment 1

1. Without using a calculator, evaluate the following expressions.

a) $\sin^{-1}\left(\sin\frac{5\pi}{4}\right)$

b) $\tan^{-1}(-\sqrt{3})$

2. Evaluate the derivative of $f(x) = \sin^{-1}(\cos 2x)$

3. Evaluate the following integrals.

a) $\int \frac{2e^{2x}}{\sqrt{1-e^{4x}}} dx$ Hint: $e^{4x} = (e^{2x})^2$

b) $\int \frac{dx}{x^2-4x+8}$

4. Evaluate the following limits using *l'Hôpital's Rule*.

a) $\lim_{x \rightarrow 0^-} x^2 \cot x$

b) $\lim_{x \rightarrow \infty} (x - \sqrt{x^2 + 1})$