

Please read directions carefully. Raise your hand if you are not sure what a problem is asking.

*You must explain your work thoroughly and unambiguously to receive full credit on questions or parts of questions designated as **Work and Answer**.*

No calculators or notes are allowed on this quiz.

Please note that there is a problem on the back.

Multiple Choice. (6 points) *Circle the letter of the best answer.*

1. $\sin^{-1}\left(\sin\left(\frac{2\pi}{3}\right)\right) =$

(a) $\frac{2\pi}{3}$

(c) $\frac{2}{\sqrt{3}}$

(b) $\frac{\pi}{3}$

(d) $\frac{3}{2}$

2. $\tan\left(\cos^{-1}\left(-\frac{3}{4}\right)\right) =$

(a) $-\frac{\sqrt{7}}{3}$

(c) $-\frac{3}{\sqrt{7}}$

(b) $-\frac{4}{3}$

(d) $-\frac{3}{5}$

Fill-In. (9 points)

1. $\sin^{-1}(-1) =$ _____

2. $\cos^{-1}(-1) =$ _____

3. For each function, fill in the derivative.

$f(x)$	$f'(x)$	$f(x)$	$f'(x)$
$\sin^{-1}(x)$		$\tan^{-1}(x)$	
$\cos^{-1}(x)$		$3\cos^{-1}(x^2)$	

Work and Answer. (5 points) *You must show all relevant work to receive full credit.*

Find the derivative of the function $f(x) = 4 \tan^{-1}(5x - 1)$.