Quiz 1 Math 251

Name:

Show *all* your work (algebraically or geometrically) for each and simplify. No credit is given without supporting work.

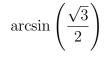
1. [2] Simplify *if* possible:

$x^2 + 3x + 2$	1 + TC	$\frac{y}{x} - \frac{x}{y}$
$\overline{x^2 - x - 2}$	\overline{C}	$\frac{1}{y} - \frac{1}{x}$

2. [2] Evaluate: $\sin \frac{7\pi}{6}$

 $16^{-\frac{3}{4}}$





3. [2] Let
$$f(x) = \begin{cases} 1 - x^2 & \text{if } x \le 0\\ 2x + 1 & \text{if } x > 0 \end{cases}$$
. Sketch the graph of f .

4. [4] Given $f(x) = x^3$ and g(x) = 2x - 3, find and simplify the following:

$$g(\beta + 2)$$
 $(g \circ f)(x) = g(f(x))$ $\frac{f(2+h) - f(2)}{h}$