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:

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

2. [2] Evaluate:

$$\sin\frac{7\pi}{6} \qquad 16^{-\frac{3}{4}}$$

$$\log_5 125 \qquad \arcsin\left(\frac{\sqrt{3}}{2}\right)$$

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

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

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