Name __________________________________________

- No calculators allowed.
- Show sufficient work to justify each answer.
- You have 15 minutes for this quiz.

1. (1 pt each) Find the exact value of the expression.
   (a) $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$
   (b) $\tan(\tan^{-1}\left(\frac{1}{2}\right))$

2. (2 pts each) Find the limit
   (a) $\lim_{x \to -3} \frac{x^2 + 2x - 3}{x^2 + 5x + 6}$
   (b) $\lim_{x \to 1} \frac{\sqrt{x+3}-2}{x-1}$
3. (2 points) At which points is the following function discontinuous. Justify your answer clearly.

\[ f(x) = \begin{cases} 
(x - 1)^2 & x \geq 0 \\
 x + 2 & -2 < x < 0 \\
(x + 2)^2 + 1 & x \leq -2 
\end{cases} \]