Name

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

1. (2 points) Evaluate \( \tan(\arcsin(-1/2)) \)

2. (2 points) Use the Intermediate Value Theorem to show that \( x^3 + x - 9 \) has at least one solution.
3. (2 points each) Find the following limits.

(a) \( \lim_{x \to -3} \frac{x^2 - 9}{x^2 + 2x - 3} \)

(b) \( \lim_{x \to 0} \frac{1}{x} - \frac{2}{x^2 + 2x} \)

(c) \( \lim_{x \to \infty} \sqrt{x^2 + 1} - x \)