Math 1001 Name:
Quiz 1 GSA:

50 minutes - no books, no notes, no electronic devices. You must show your work to receive credit.

1. Solve the equation: $|x^2 + 3x - 2| = 2$. Explicitly write the solution set.

2. For $x, y \neq 0$, simplify $\left(\dfrac{3x^{-1}}{4y^{-1}}\right)^{-2}$, expressing your answer with only positive exponents.

3. Solve the equation: $\dfrac{x}{2} - 4 = \dfrac{3x}{4}$. Explicitly write the solution set.

4. Use synthetic division to express $\dfrac{4x^3 - 3x^2 - 8x + 4}{x - 2}$ as the sum of a degree 2 polynomial and a rational expression.

5. Simplify $\dfrac{x}{x^2-9}+\dfrac{2}{x^2+x-6}$, expressing your answer as a single rational expression in factored form.

6. Solve by factoring: $x^3-x^2-9x+9=0$. Explicitly write the solution set.

7. For $x \neq 0, 1, 2$, simplify $\dfrac{\dfrac{x^2}{x-2}+1}{\dfrac{1}{x}-1}$, expressing your answer as single rational expression in factored form.

8. Use the quadratic formula to solve : $x^2+2x-2=0$. Explicitly write the solution set.