1. The processor speed, in megahertz of Intel processors could be approximated by the following function of time \( t \) in years since the start of 1995.

\[
f(t) = \begin{cases} 
75t + 200, & 0 \leq t \leq 4, \\
600t - 1900, & 4 < t \leq 9. 
\end{cases}
\]

Sketch the graph of \( f \) and use your graph to estimate when processor speed first reached 2.0 gigahertz (1 gigahertz = 1000 megahertz). (2 Points)

2. Sketch the graph of the given function, evaluate the given expression. (3 Points)

\[
f(x) = \begin{cases} 
-x, & -1 < x < 0, \\
x - 2, & 0 \leq x \leq 2, \\
-x, & 2 < x \leq 4 
\end{cases}
\]

Find \( f(0), f(1), f(2), f(3) \).

3. Solve the following equation. (2 Points)

\[
\frac{x - 4}{x + 1} - \frac{x}{x - 1} = 0.
\]

4. Determine all possible real solutions of equation. (2 Points)

\[
x + 4 = \frac{1}{x - 2}.
\]

5. Rewrite the expression as a single rational expression, simplify as much as possible. (2 Points)

\[
\frac{1}{(x+y)^2} - \frac{1}{x^2}.
\]

6. Factor the expression and set it equal to zero and solve for the unknown. (2 Points)

\[
12x^2 + x - 6.
\]