QUIZ 1
You have 25 minutes.
No notes, no books.
YOU MUST SHOW ALL WORK TO RECEIVE CREDIT
Good luck!

Name ________________________________

1. ___________ (/10 points)

2. ___________ (/20 points)

Total ___________ (/30 points)
1. Find the exact value of the following expressions.

(a) \(10^{\log_{10}(5^{\log_{5} 2000})}\)

(b) \(\frac{\ln 2 + \ln 72}{\ln 12}\)
2. Consider the function \( f(x) = \log_2(x^2 + x) \).

(a) What is the domain of \( f(x) \)?

(b) Graph \( f(x) \) for \( x > 0 \). (hint. \( \log_2(x^2 + x) = \log_2 x + \log_2(x + 1) \) for \( x > 0 \).)

(c) Graph \( f(x) \) for all \( x \) in its domain, and then find the range of \( f(x) = \log_2(x^2 + x) \).

(d) Find \( \lim_{x \to 0^+} f(x) \), \( \lim_{x \to 0^-} f(x) \) and \( \lim_{x \to \infty} f(x) \).