QUIZ 1

Instructions: Complete the following problems. Be sure to show your work when you make 'significant' leaps in problem solving. Answers which are not accompanied by justification will receive little or no credit.

(1) (20 points)

- Find the inverse of the function $f(x) = \dfrac{x+1}{x}$.

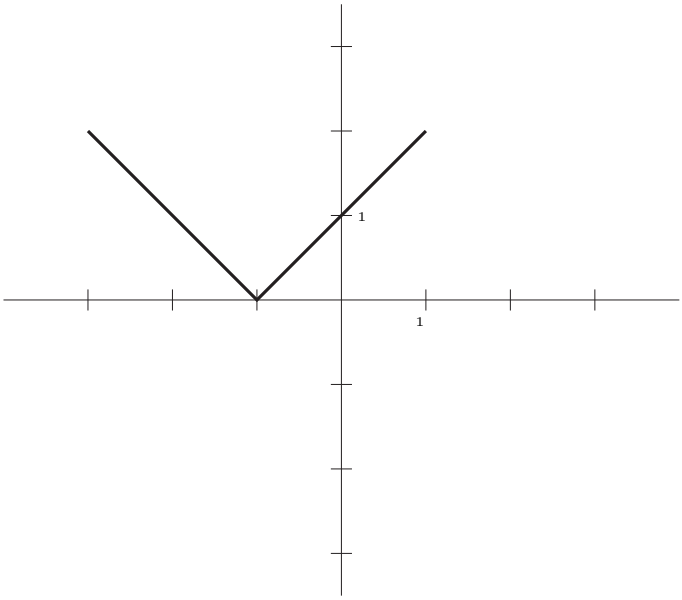
- Find the inverse of the function $f(x) = \ln(x^3)$

(2) (10 points) Compute the following quantities

- $\ln(1)$

- $\log_3(9)$

(3) (30 points) Consider the graph of the function $f(x)$ given below.



- What is $f^{-1}(0)$?

- On the graph above, sketch $f^{-1}(x)$.

- Is f^{-1} a function? Why or why not?

(4) (20 points)

- Find functions $f(x)$ and $g(x)$ with $\sqrt{x^3+1} = (f \circ g)(x)$.

- Find functions $f(x), g(x)$ and $h(x)$ with $\tan(\cos(\sin(x))) = (f \circ g \circ h)(x)$.

(5) (20 points)

- Find the slope of the line passing through $(2, 3)$ and $(4, 11)$.

- Find the equation of the line passing through $(2, 3)$ and $(4, 11)$.