

Name \_\_\_\_\_

- You have 20 minutes
- No calculators
- Show sufficient work

1. (2 points) Evaluate  $\sec(\arctan(\pi))$ .

2. (2 points) Find all horizontal and vertical asymptotes on the graph of  $f(x) = \frac{3 + 2 \ln x}{5 - 6 \ln x}$

3. (2 points each) Evaluate the following limits.

$$(a) \lim_{x \rightarrow 5} \frac{x^2 - 3x - 10}{x^2 - 25}$$

$$(b) \lim_{x \rightarrow 2^+} \frac{e^x}{\ln(5 - x^2)}$$

$$(c) \lim_{x \rightarrow 1} \frac{2 - 2x}{3 - \sqrt{x + 8}}$$