

# Exam 1

## Math 211

Please write your name on top of every sheet.

Give reasons for your answer.

You have 50 minutes for the exam.

Good luck!

1 Find the tangent line of the graph

$$f(x) = x^4 + 3x + 1$$

in  $(1, 5)$ .  
(30 points)

2) Solve for  $t$

$$\ln(5 + e^{t^2-3}) = 2.$$

(20 points)

3) Find the natural domain and all horizontal and vertical asymptotes of the following function

$$f(x) = \frac{(x^2 + 5x + 6)^2}{(x^2 + 4x + 4)(x + 3)}$$

(30 points)