

Math 1300  
Fall 2025  
Quiz 11

Name: \_\_\_\_\_

1. (2 points) Evaluate  $\lim_{x \rightarrow \infty} x \tan \frac{3}{x}$ .

Answer:

2. (2 points) Two positive numbers  $x$  and  $y$  have sum 12. Find the numbers that maximize  $x^2 y$ .

Answer:

3. (2 points) Let  $f(x) = 6x^2 - 4x + 3$ . Find the antiderivative of  $f(x)$  that passes through the point  $(1, 5)$ .

Answer:

4. (4 points) A bakery sells 100 loaves of sourdough per day at \$8 each. A survey shows that for every \$1 decrease in price, daily sales increase by 10 loaves. What **price** maximizes the bakery's daily revenue? Be sure to justify that the value you found gives the absolute maximum.