

Calculus II

Name: _____

Study Guide 3

Class: _____

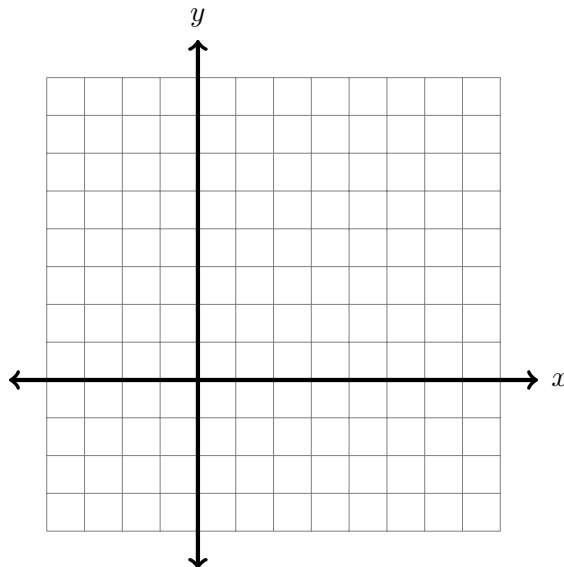
Due Date: _____

Score: _____

No Work \Leftrightarrow No Points

Use Pencil Only \Leftrightarrow Be Neat & Organized

1. (6 points) Graph the function $f(x) = \log_6 x$, and its inverse, then complete the chart below.



	Domain	Range
$f(x)$		
$f^{-1}(x)$		

2. Use your calculator to find

(a) (1 point) $\log 456$

(a) _____

(b) (1 point) $\ln 1000$

(b) _____

3. (3 points) Solve $\log_3(\sqrt{x} - 1) = 2$, and check your solution.

3. _____

4. (2 points) Use change-of-base formula to evaluate $\log_7 100$ rounded to three decimal places.

4. _____

5. (3 points) Solve: $\log_2(x^2 - 2x) = 3$

5. _____

6. Solve:

(a) (4 points) $6^x = 2024$

(a) _____

(b) (4 points) $10^{9-4x} = 4321$

(b) _____

7. Find $f'(x)$ for

(a) (3 points) $f(x) = \ln(\sin^3 x)$

(a) _____

(b) (3 points) $f(x) = \cos x \ln(\sin x)$

(b) _____

(c) (3 points) $f(x) = \frac{x}{\ln^2 x}$

(c) _____

(d) (4 points) $f(x) = \ln(x^2 - 2x)$

(d) _____

8. Evaluate the following integrals.

(a) (4 points) $\int_1^2 \frac{1}{8-3x} dx$

(a) _____

(b) (4 points) $\int_0^\pi \frac{\cos x}{2+\sin x} dx$

(b) _____

(c) (5 points) $\int_0^{\pi/2} \frac{\sin 2x}{1+\cos^2 x} dx$

(c) _____
