

## Math 193 – Test 1: Version A

February 2, 2018

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

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**Total: 25 points**

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Integrate the following.

1. (3 points)  $\int \frac{3y}{\sqrt{4-y^2}} dy$

2. (3 points)  $\int \frac{e^{\tan \theta}}{\cos^2 \theta} d\theta$

3. (4 points)  $\int \frac{dx}{x^2 - 6x + 25}$

4. (4 points)  $\int \frac{24}{x^2 - 6x} dx$

5. (4 points)  $\int e^x \cos 2x \, dx$

6. (4 points) Find the two first partial derivatives for the following function.

$$f(x, y) = \frac{e^{-x}}{y} + 5 \ln x$$

7. (3 points) Using polar coordinates, set up BUT DO NOT EVALUATE the double integral for the volume of the solid with vertical sides, a top surface of  $z = 3 - x$  and a base in the  $xy$ -plane consisting of a semicircle of radius 2.

Hint: Use  $V = \iint z \, dA$ .

