

## Math 187 – Quiz #3

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

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Total: 25 points

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Evaluate the following integrals.

1.  $\int x e^{5x} dx$  (3 points)

2.  $\int \frac{dy}{y^2 - 4y + 13}$  (3 points)

3. Use an appropriate trig substitution to evaluate

(4 points)

$$\int \frac{dx}{x^2 \sqrt{x^2 - 16}}$$

4. Evaluate  $\int \frac{x^2 + x - 12}{(x-1)(x^2+9)} dx$

(5 points)

5. Find the first partial derivatives of the following function with respect to each of the independent variables. (2 points)

$$f(r, t) = 4r^2 + r \ln(t^3)$$

6. Evaluate. (3 points)

$$\int_1^2 \int_0^{\sqrt{y}} (2xy + y^2) dx dy$$

7. Find the first-octant volume below the surface  $z = 3x^2$  and bounded by the plane  $x + y = 3$ . (5 points)