

Name:

ID #:

Section #:

1) [4pts] Evaluate the iterated integrals:

$$(a) \int_0^1 \int_0^1 (u - v)^5 du dv$$

$$(b) \int_0^1 \int_{3y}^3 e^{x^2} dx dy$$

**Solution:**

2) [3pts] Find the volume of the solid enclosed by the hyperboloid  $-x^2 - y^2 + z^2 = 1$  and the plane  $z = 2$ .

**Solution:**

3) [3pts] Evaluate the double integrals:

$$\iint_D xy^2 dA,$$

where  $D$  is enclosed by the line  $x = 0$  and the curve  $x = \sqrt{1 - y^2}$ .

**Solution:**

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1) [4pts] Evaluate the iterated integrals:

$$(a) \int_0^1 \int_0^1 \sqrt{s+t} \, ds dt$$

$$(b) \int_0^8 \int_{\sqrt[3]{y}}^2 e^{x^4} dx dy$$

**Solution:**

2) [3pts] Evaluate the double integrals:

$$\iint_R \sqrt{4-x^2-y^2} \, dA,$$

where  $R = \{(x, y) \mid x^2 + y^2 \leq 4, x \geq 0\}$

**Solution:**

3) [3pts] Let  $D$  be the region enclosed by the curves  $y = 0$ ,  $y = x^2$ ,  $x = 1$ . Find the average value of  $f = x \sin y$  over  $D$ .

**Solution:**