Web**Assign**

Hw 19 (15.1-2): Multiple and Iterated Integrals (Homework)

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Current Score: 20 / 20

Due: Thursday, October 11 2012 11:00 PM EDT

1. 1.53/1.53 points | Previous Answers

SCalcET7 15.1.001.MI.

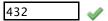
Estimate the volume of the solid that lies below the surface z = xy and above the following rectangle.

$$R = \left\{ (x, y) \mid 0 \le x \le 6, \, 4 \le y \le 8 \right\}$$

(a) Use a Riemann sum with m=3, n=2, and take the sample point to be the upper right corner of each square.



(b) Use the Midpoint Rule to estimate the volume of the solid.





2. 1.53/1.53 points | Previous Answers

SCalcET7 15.1.006.

A 20-ft-by-30-ft swimming pool is filled with water. The depth is measured at 5-ft intervals, starting at one corner of the pool, and the values are recorded in the table. Estimate the volume of water using the Midpoint Rule with m = 2 and n = 3.

3500		V	ft ³				
<i>x</i> \ <i>y</i>	0	5	10	15	20	25	30
0	2	3	4	6	7	8	8
5	2	3	4	7	8	9	8
10	2	4	6	8	10	12	10
15	2	3	4	5	6	8	7
20	2	2	2	2	3	4	4

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SCalcET7 15.1.012.

Evaluate the double integral by first identifying it as the volume of a solid.

$$\iint_{R} (5-x) dA, R = \{(x, y) \mid 0 \le x \le 5, 0 \le y \le 5\}$$

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4. 1.53/1.53 points | Previous Answers

SCalcET7 15.2.001.

Consider the function.

$$f(x, y) = 18x^2y^3$$

(a) Find $\int_0^2 f(x, y) dx$.



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(b) Find
$$\int_0^1 f(x, y) dy$$
.



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SCalcET7 15.2.002.

Consider the function.

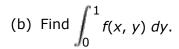
$$f(x, y) = y + xe^{y}$$
(a) Find
$$\int_{0}^{2} f(x, y) dx$$
.



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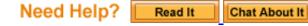




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SCalcET7 15.2.007.

Calculate the iterated integral.

$$\int_{-9}^{9} \int_{0}^{\pi/2} (y + y^{2} \cos x) \, dx \, dy$$



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7. 1.53/1.53 points | Previous Answers

SCalcET7 15.2.009.

Calculate the iterated integral.

$$\int_{1}^{36} \int_{1}^{6} \left(\frac{x}{y} + \frac{y}{x} \right) dy \ dx$$



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SCalcET7 15.2.012.

Calculate the iterated integral.



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9. 1.53/1.53 points | Previous Answers

SCalcET7 15.2.013.

Calculate the iterated integral.

$$\int_0^2 \int_0^{\pi} 4r \sin^2\theta \ d\theta \ dr$$



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SCalcET7 15.2.017.MI.

Calculate the double integral.

$$\iint_{R} \frac{3xy^{2}}{x^{2}+1} dA, \quad R = \{(x, y) \mid 0 \le x \le 3, -2 \le y \le 2\}$$



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11.1.53/1.53 points | Previous Answers

SCalcET7 15.2.025.

Find the volume of the solid that lies under the plane 4x + 8y - 2z + 17 = 0 and above the rectangle $R = \{(x, y) \mid -1 \le x \le 4, -1 \le y \le 1\}$.



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SCalcET7 15.2.027.

Find the volume of the solid that lies under the elliptic paraboloid $x^2/9 + y^2/16 + z = 1$ and above the rectangle $R = [-1, 1] \times [-3, 3]$.



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13.1.64/1.64 points | Previous Answers

SCalcET7 15.2.030.

Find the volume of the solid in the first octant bounded by the parabolic cylinder $z = 16 - x^2$ and the plane y = 1.



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