WebAssign
Hw 34 (16.7): Surface Integrals (Homework)

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MA 261 Fall 2012, section 121, Fall 2012
Instructor: David Daniels

Current Score : 20 / 20 **Due :** Tuesday, November 20 2012 11:00 PM EST

The due date for this assignment is past. Your work can be viewed below, but no changes can be made.

Important! Before you view the answer key, decide whether or not you plan to request an extension. Your Instructor may *not* grant you an extension if you have viewed the answer key. Automatic extensions are not granted if you have viewed the answer key.

View Key

1. 3.33/3.33 points | Previous Answers SCalcET7 16.7.005.

Evaluate the surface integral.

$\iint_S (x + y + z)\, dS$, S is the parallelogram with parametric equations $x = u + v$, $y = u - v$, $z = 1 + 2u + v$, $0 \le u \le 5$, $0 \le v \le 3$.

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2. 3.33/3.33 points | Previous Answers SCalcET7 16.7.007.

Evaluate the surface integral.

$\iint_S y\, dS$, S is the helicoid with vector equation $\mathbf{r}(u, v) = \langle u \cos v, u \sin v, v \rangle$, $0 \le u \le 2$, $0 \le v \le \pi$.

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3. 3.33/3.33 points | Previous Answers SCalcET7 16.7.012.

Evaluate the surface integral.

$$\iint_S y\, dS$$

S is the surface $z = \frac{2}{3}\left(x^{3/2} + y^{3/2}\right)$, $0 \le x \le 4$, $0 \le y \le 5$

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4. 3.33/3.33 points | Previous Answers SCalcET7 16.7.013.

Evaluate the surface integral.

$$\iint_S x^2 z^2\, dS$$

S is the part of the cone $z^2 = x^2 + y^2$ that lies between the planes $z = 4$ and $z = 5$

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5. 3.33/3.33 points | Previous Answers SCalcET7 16.7.015.

Evaluate the surface integral.

$$\iint_S y \, dS$$

S is the part of the paraboloid $y = x^2 + z^2$ that lies inside the cylinder $x^2 + z^2 = 9$

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6. 3.35/3.35 points | Previous Answers SCalcET7 16.7.017.

Evaluate the surface integral.

$$\iint_S \left(x^2z + y^2z\right) dS$$

S is the hemisphere $x^2 + y^2 + z^2 = 9$, $z \geq 0$

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