King Fahd University of Petroleum and Minerals

Department of Math & Stat

Math 201, Sections: 2, 5, 14 (071)

Quiz 5(a)

Time: 15 Minutes **Marks: ________/9**

Name: ____

ID #: ______________________ Serial #: __________ Sec.#: ____________

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1. Use triple integrals to find volume of the solid bounded by the surface $z = \sqrt{y}$ and the planes $x + y = 1, x = 0$ and $z = 0$.

2. Set up a triple iterated integral for the volume of the solid enclosed by the cylinders $x^2 + y^2 = 1$ and $x^2 + z^2 = 1$.

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Quiz 5(b)

Time: 15 Minutes **Marks: ________/9**

Name: ____

ID #: __________________________ Serial #: ___________ Sec.#: _____________

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1. Use spherical coordinates to evaluate $\displaystyle\int_0^3 \int_0^{\sqrt{9-y^2}} \int_{\sqrt{x^2+y^2}}^{\sqrt{16-x^2-y^2}} (x^2+y^2+z^2)\, dz\, dx\, dy.$

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Quiz 5(c)

Time: 15 Minutes **Marks: ________/9**

Name: ______________________________

ID #: ____________________ Serial #: __________ Sec.#: __________

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1. Use cylindrical coordinates to find volume of the solid enclosed by the paraboloid $z = x^2 + y^2$ and the plane $z = 9$.

2. Convert $\int_{-1}^{1}\int_{0}^{\sqrt{1-y^2}}\int_{x^2+y^2}^{\sqrt{x^2+y^2}} xyz\ dz\ dx\ dy$ to cylindrical coordinates. (Do not evaluate the resulting integral).

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Quiz 5(d)

Time: 15 Minutes **Marks: ________/9**

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1. Write $\displaystyle\iiint_G f(x,y)z\,dv$ as an iterated integral in 3 different ways where G is the solid $9x^2 + 4y^2 + z^2 = 1$.

2. Set up an iterated integral in spherical coordinates for the volume of the solid that lies above the cone $z = \sqrt{x^2 + y^2}$ and below the sphere $x^2 + y^2 + z^2 = z$.