

Math 2210 - Assignment 4

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1 Sections 11.8 and 11.9

1.1 Section 11.8

11.8.1 Name and sketch the graph of the following equation in three-space.

$$4x^2 + 36y^2 = 144$$

11.8.9 Name and sketch the graph of the following equation in three-space.

$$4x^2 + 16y^2 - 32z = 0$$

11.8.19 Name and sketch the graph of the following equation in three-space.

$$z = \sqrt{16 - x^2 - y^2}$$

11.8.28 Find the equation of the surface that results when the curve $z = 2y$ in the yz -plane is revolved about the z -axis.

1.2 Section 11.9

11.9.2 Change the following from cylindrical to spherical coordinates.

1. $(1, \pi/2, 1)$

2. $(-2, \pi/4, 2)$

11.9.5 Change the following from Cartesian to spherical coordinates.

1. $(2, -2\sqrt{3}, 4)$

2. $(-\sqrt{2}, \sqrt{2}, 2\sqrt{3})$.

11.9.7 Sketch the graph of the given cylindrical or spherical coordinates.

$$r = 5$$

11.9.17 Change the given equation into the equivalent equation in cylindrical coordinates:

$$x^2 + y^2 = 9$$

11.9.25 Change the given equation into the equivalent equation in cylindrical coordinates.

$$x + y = 4$$

11.9.29 Change the given equation into the equivalent equation in Cartesian coordinates.

$$r^2 \cos 2\theta = z$$