

Name : \_\_\_\_\_

Class Number: \_\_\_\_\_

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1.    T    F            The set of points  $\{(x, y) : x = 0\}$  is a point on the number line.

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2.    T    F            The set of points  $\{(x, y, z) : x^2 + y^2 = 1\}$  is a circle.

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3. Find the radius and center of a sphere with equation:

$$x^2 + y^2 + z^2 + 4x - 6y + 2z + 6 = 0$$

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4. Sketch a plane that is parallel to the  $yz$ -plane and runs through the point  $(7, 8, 4)$ . Also, find the equation for this plane.

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5. Find the equation of the sphere with center  $(4, -1, 3)$  and radius  $\sqrt{5}$ :

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6. Find a vector of length 5 in the direction of vector  $\mathbf{x} = \langle 2, -2, 1 \rangle$ ?