

Due: Tue Apr 7 2015 11:00 PM PDT

Question

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1. Question Details

SCalcET7 12.1.003.MI. [2287022]

Use the given points to answer the following questions.

$$A(-3, 0, -6), \quad B(4, 4, -9), \quad C(1, 1, 7)$$

Which of the points is closest to the yz -plane?

- A
- B
- C

Which point lies in the xz -plane?

- A
- B
- C

2. Question Details

(a) What does the equation $x = 5$ represent in \mathbb{R}^2 ?

- a line
- a circle
- a point
- a plane

What does it represent in \mathbb{R}^3 ?

- a plane
- a circle
- a point
- a line

(b) What does the equation $y = 3$ represent in \mathbb{R}^3 ?

- a line
- a circle
- a plane
- a point

What does $z = 8$ represent?

- a circle
- a line
- a point
- a plane

What does the pair of equations $y = 3, z = 8$ represent? In other words, describe the set of points (x, y, z) such that $y = 3$ and $z = 8$.

- a plane
- a line
- a point
- a circle

3. Question Details

SCalcET7 12.1.009. [1760783]

Determine whether the points lie on a straight line.

(a) $A(2, 3, 1)$, $B(3, 4, 0)$, $C(1, 2, 2)$

- Yes, they do lie on a straight line.
 No, they do not.

(b) $D(0, -3, 3)$, $E(1, 1, 1)$, $F(3, 9, -3)$

- Yes, they do lie on a straight line.
 No, they do not.

4. Question Details

SCalcET7 12.1.010. [1815534]

Find the distance from $(2, -3, 9)$ to each of the following.

(a) the xy -plane

(b) the yz -plane

(c) the xz -plane

(d) the x -axis

(e) the y -axis

(f) the z -axis

5. Question Details

SCalcET7 12.1.012. [2203783]

Find an equation of the sphere with center $(2, -12, 6)$ and radius 10 .

Use an equation to describe its intersection with each of the coordinate planes. (If the sphere does not intersect with the plane, enter DNE.)

intersection with xy -plane

intersection with xz -plane

intersection with yz -plane

6. Question Details

SCalcET7 12.1.013.MI. [1864858]

Find an equation of the sphere that passes through the point $(6, 3, -1)$ and has center $(5, 6, 3)$.

7. Question Details

SCalcET7 12.1.014. [1835893]

Find an equation of the sphere that passes through the origin and whose center is $(4, 3, 3)$.

8. Question Details

SCalcET7 12.1.017. [1760749]

Write the equation of the sphere in standard form.

$$2x^2 + 2y^2 + 2z^2 = 4x - 24z + 1$$

Find its center and radius.

center $(x, y, z) = (\quad , \quad , \quad)$

radius

9. Question Details

SCalcET7 12.1.021. [1835731]

Find equations of the spheres with center $(3, -3, 4)$ that touch the following planes.

- (a) xy -plane
- (b) yz -plane
- (c) xz -plane

10. Question Details

SCalcET7 12.1.036. [1760741]

Write an inequality to describe the region.

The solid cylinder that lies on or below the plane $z = 3$ and on or above the disk in the xy -plane with center the origin and radius 3

- $x^2 + y^2 \leq 3, 0 \leq z \leq 3$
- $x^2 + y^2 \leq 9, 0 \leq z \leq 3$
- $x^2 + y^2 + z^2 \leq 3, 0 \leq z \leq 3$
- $x^2 + y^2 + z^2 \leq 9, 0 \leq z \leq 3$
- none of these

11. Question Details

SCalcET7 12.1.037. [1760770]

Write an inequality to describe the region.

The region consisting of all points between (but not on) the spheres of radius r and R centered at the origin, where $r < R$

- $r^2 < \sqrt{x^2 + y^2 + z^2} < R^2$
- $R^2 < x^2 + y^2 + z^2 < r^2$
- $r^2 < x^2 + y^2 + z^2 < R^2$
- $r^2 \leq x^2 + y^2 + z^2 \leq R^2$
- none of these

Assignment Details