WebAssign
Hw 3 (12.5-6): Lines, Planes; Quadratic Surfaces (Homework)

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

Current Score : 18.89 / 20 **Due :** Tuesday, August 28 2012 11:00 PM EDT

1. 2.22/2.22 points | Previous Answers SCalcET7 12.5.016.

(a) Find parametric equations for the line through $(5, 1, 8)$ that is perpendicular to the plane $x - y + 4z = 8$. (Use the parameter t.)

$(x(t), y(t), z(t)) =$ (✔)

(b) In what points does this line intersect the coordinate planes?

xy-plane $(x, y, z) =$ (✔)

yz-plane $(x, y, z) =$ (✔)

xz-plane $(x, y, z) =$ (✔)

Need Help? Read It Chat About It

2. 2.22/2.22 points | Previous Answers SCalcET7 12.5.045.

Find the point at which the line intersects the given plane.

$x = 4 - t,\ y = 5 + t,\ z = 4t; \quad x - y + 5z = 17$

$(x, y, z) =$ (

Get ADOBE FLASH PLAYER

Flash Player version 10 or higher is required for this question.
You can get Flash Player free from Adobe's website.

✔)

Need Help? Read It Watch It Chat About It

3. 2.22/2.22 points | Previous Answers SCalcET7 12.5.049.

Find direction numbers for the line of intersection of the planes $x + y + z = 1$ and $x + z = 0$. (Enter your answers as a comma-separated list.)

Get ADOBE FLASH PLAYER

Flash Player version 10 or higher is required for this question.
You can get Flash Player free from Adobe's website.

✔

Need Help? Read It Watch It Chat About It

4. 1.11/2.22 points | Previous Answers SCalcET7 12.5.054.

Determine whether the planes are parallel, perpendicular or neither.

$2x - 4y + 3z = 5, \quad x + 8y + 10z = 3$

- ○ parallel
- ○ perpendicular
- ◉ neither

✖

If neither, find the angle between them. (If the planes are parallel or perpendicular, enter PARALLEL or PERPENDICULAR, respectively.)

Flash Player version 10 or higher is required for this question.
You can get Flash Player free from Adobe's website.

✔ °

Need Help? Read It Chat About It

---

5. 2.22/2.22 points | Previous Answers SCalcET7 12.5.057.

Consider the following planes.

$x + y + z = 4, \quad x + 7y + 7z = 4$

(a) Find parametric equations for the line of intersection of the planes. (Use the parameter t.)

$(x(t), y(t), z(t)) =$ (

Flash Player version 10 or higher is required for this question.
You can get Flash Player free from Adobe's website.

✔)

(b) Find the angle between the planes. (Round your answer to one decimal place.)

29.5 ✔ °

Need Help? Read It Watch It Chat About It

---

6. 2.22/2.22 points | Previous Answers SCalcET7 12.6.001.

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

- ○ circle
- ○ hyperbola
- ◉ parabola
- ○ ellipse
- ○ line

✔

(b) What does it represent as a surface in $\mathbb{R}^3$?

- ○ elliptic paraboloid
- ○ hyperboloid
- ◉ parabolic cylinder
- ○ cone
- ○ ellipsoid

✔

(c) What does the equation $z = y^2$ represent?

- ellipsoid
- hyperboloid
- elliptic paraboloid
- cone
- parabolic cylinder ✔

Need Help? Read It | Watch It | Chat About It

---

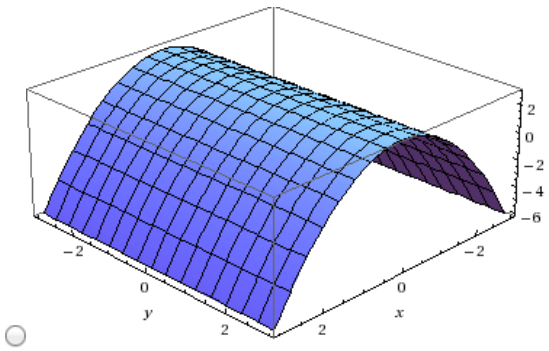
7. 2.22/2.22 points | Previous Answers SCalcET7 12.6.003.

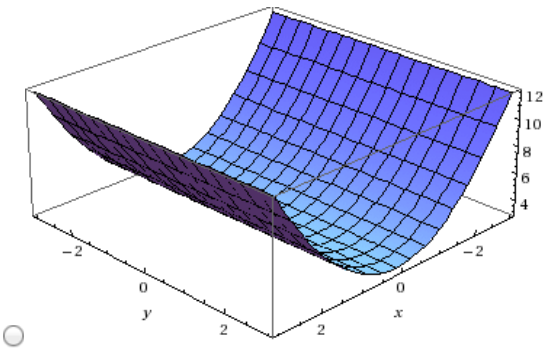
Describe the surface.

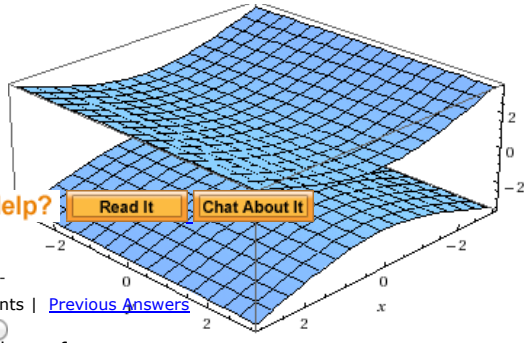
$x^2 + z^2 = 3$

- sphere
- ellipsoid
- hyperboloid
- circular cylinder ✔
- elliptic cylinder
- hyperbolic cylinder
- parabolic cylinder
- elliptic paraboloid

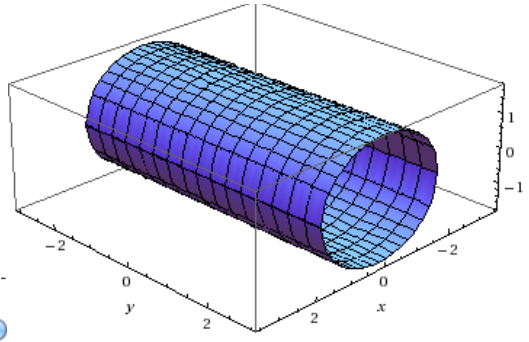
Sketch the surface.







Need Help? Read It Chat About It



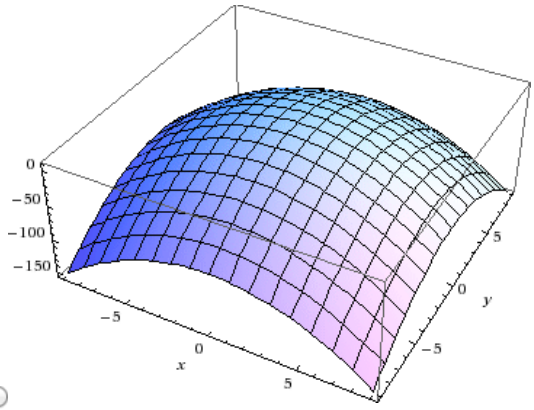
8. 2.22/2.22 points | Previous Answers SCalcET7 12.6.005.

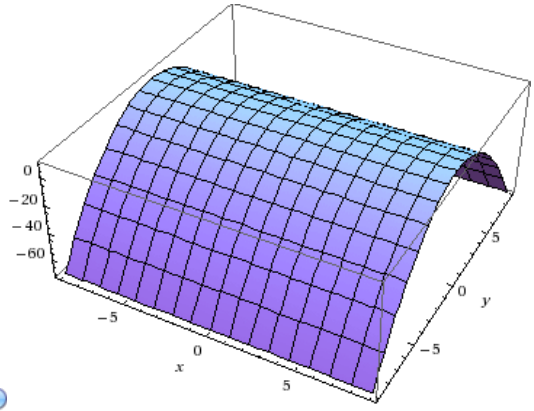
Describe the surface.

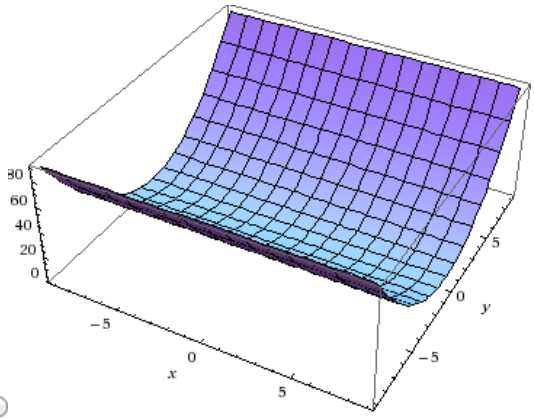
$z = 9 - y^2$

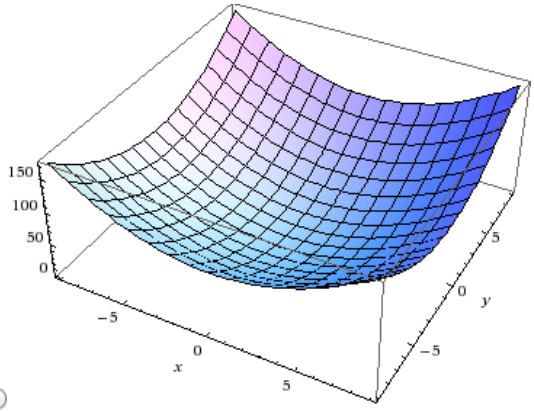
- cone
- ellipsoid
- hyperboloid
- elliptic cylinder
- hyperbolic cylinder
- parabolic cylinder
- elliptic paraboloid
- hyperbolic paraboloid

Sketch the surface.







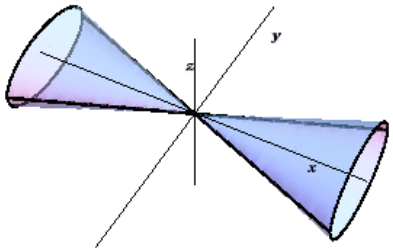


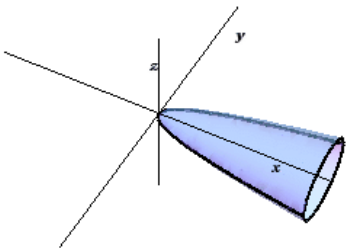
Need Help? Read It Chat About It

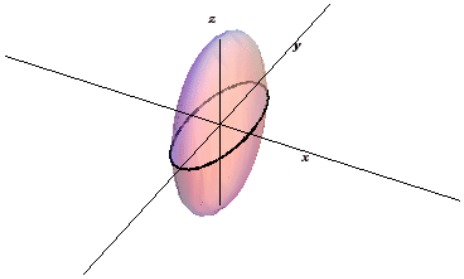
9. 2.24/2.24 points | Previous Answers SCalcET7 12.6.014.

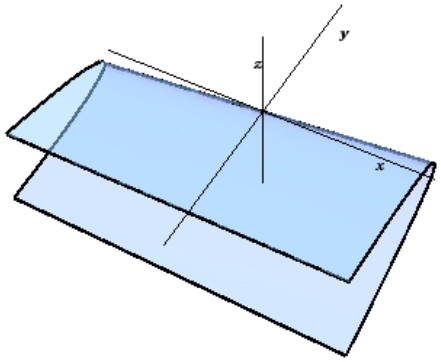
Use traces to sketch the surface.

$16x^2 + 9y^2 + z^2 = 144$









Identify the surface.

- ○ hyperboloid of two sheets
- ○ elliptic cone
- ○ hyperbolic paraboloid
- ○ elliptic paraboloid
- ○ hyperboloid of one sheet
- ○ parabolic cylinder
- ○ elliptic cylinder
- ◉ ellipsoid

Need Help? Read It Chat About It