← MA2009, section GRUPO4, Fall 2019

Tarea 1: Planos y Rectas (Homework)

INSTRUCTOR
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Current Score

QUESTION	1	2	3	4	
POINTS	6.66/6.66 ✓	6.66/6.66 ✓	6.66/6.66 ✓	6.66/6.66 ✓	6.66

TOTAL

100/100	100.0%

Due Date Past Due

AGO. 24 11:59 P. M.

Request Extension

Description

Assignment Submission & Scoring

Assignment Submission

For this assignment, you submit answers by question parts. The number of submissions remaining for each question part only changes if you submit or change the answer.

Assignment Scoring

Your last submission is used for your score.

The due date for this assignment has passed.

Your work can be viewed below, but no changes can be made.

Important! Before you view the answer key, decide whether or not you plan to request an extension. Your Instructor may not grant you an extension if you have viewed the answer key. Automatic extensions are not granted if you have viewed the answer key.

Request Extension | View Key

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1. **6.66/6.66 points** **Previous Answers** SCalc8 12.5.010. **My Notes** **Ask Your Teacher**

Find parametric equations and symmetric equations for the line. (Use the parameter t.)

The line through $(4, 3, 0)$ and perpendicular to both $\mathbf{i} + \mathbf{j}$ and $\mathbf{j} + \mathbf{k}$

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

$$t+4,3-t,t

$)$

The symmetric equations are given by

- $x + 4 = -(y + 3) = z.$
- $-(x - 4) = y - 3 = z.$
- $x - 4 = y - 3 = -z.$
- $x - 4 = -(y - 3) = z.$
- $x + 4 = -(y + 3), z = 0.$

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2. **6.66/6.66 points** **Previous Answers** SCalc8 12.5.501.XP.

My Notes **Ask Your Teacher**

Find parametric equations and symmetric equations for the line. (Use the parameter t.)

The line through $(4, -1, 4)$ and parallel to the line $x + 1 = \frac{y}{2} = z - 2$

$(x, y, z) = ($

$$t+4,2t-1,t+4

$)$

The symmetric equations are given by

- $x - 4 = \frac{y - 1}{2} = z - 4.$
- $\frac{x - 4}{2} = y + 1 = z - 4.$
- $x - 4 = \frac{y + 1}{2} = z - 4.$ ✓
- $x + 4 = \frac{y + 1}{2} = z - 4.$
- $\frac{x - 4}{2} = y + 1 = \frac{z + 4}{2}.$

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3. **6.66/6.66 points** **Previous Answers** SCalc8 12.5.015. **My Notes** **Ask Your Teacher**

(a) Find symmetric equations for the line that passes through the point $(3, -4, 8)$ and is parallel to the vector $\langle -1, 4, -2 \rangle$.

- $\frac{x-3}{-1} = \frac{y+4}{4} = \frac{z-8}{-2}$.
- $x + 3 = \frac{y+4}{4} = \frac{z-8}{-2}$.
- $-(x-3) = 4(y+4) = -2(z-8)$.
- $\frac{x+3}{-1} = \frac{y-4}{4} = \frac{z+8}{-2}$.
- $-(x+3) = 4(y-4) = -2(z+8)$.

(b) Find the points in which the required line in part (a) intersects the coordinate planes.

point of intersection with *xy*-plane ($$-1,12,0)

point of intersection with *yz*-plane ($$0,8,2)

point of intersection with *xz*-plane ($$2,0,6)

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4. **6.66/6.66 points** **Previous Answers** SCalc8 12.5.031. **My Notes** **Ask Your Teacher**

Find an equation of the plane.

The plane through the points (0, 9, 9), (9, 0, 9), and (9, 9, 0)

$$x+y+z=18

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5. **6.66/6.66 points** **Previous Answers** SCalc8 12.5.506.XP.

My Notes **Ask Your Teacher**

Find an equation of the plane.

The plane that passes through the point (2, 3, 4) and contains the line $x = 4t, y = 2 + t, z = 3 - t$

$$x-3y+z=-3

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6. **6.66/6.66 points** **Previous Answers** SCalc8 12.5.509.XP.

My Notes **Ask Your Teacher**

Find an equation of the plane.

The plane that passes through the point (−2, 1, 1) and contains the line of intersection of the planes $x + y - z = 3$ and $3x - y + 4z = 3$

$$-9x+11y-26z=3

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7. **6.66/6.66 points** **Previous Answers** SCalc8 12.5.040. **My Notes** **Ask Your Teacher**

Find an equation of the plane.

The plane that passes through the line of intersection of the planes $x - z = 3$ and $y + 2z = 3$ and is perpendicular to the plane $x + y - 4z = 6$

$$7x+5y+3z=36

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8. **6.66/6.66 points** **Previous Answers** SCalc8 12.5.510.XP.

My Notes **Ask Your Teacher**

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

$x = 2 - t,\ y = 5 + t,\ z = 3t;\quad x - y + 4z = 7$

$(x, y, z) = ($

$$1,6,3

$)$

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9. **6.66/6.66 points** **Previous Answers** SCalc8 12.5.513.XP.

My Notes **Ask Your Teacher**

Where does the line through $(1, 0, 1)$ and $(5, -3, 4)$ intersect the plane $x + y + z = 10$?

$(x, y, z) = ($

$$9,-6,7

$)$

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10. 6.66/6.66 points Previous Answers SCalc8 12.5.057. My Notes Ask Your Teacher

Consider the following planes.

$x + y + z = 2, \quad x + 7y + 7z = 2$

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

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

$2,-6t,6t$

)

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

29.5 °

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11. 6.66/6.66 points Previous Answers SCalc8 12.5.060. My Notes Ask Your Teacher

Find symmetric equations for the line of intersection of the planes.

$z = 2x - y - 7, \quad z = 5x + 2y - 13$

- $x = 3, -3(y + 1) = 9z$
- $3(x + 3) = -3(y - 1) = 9z$
- $3(x - 3) = -3(y + 1) = 9z$
- $\frac{x + 3}{3} = \frac{y - 1}{-3} = \frac{z}{9}$
- $\frac{x - 3}{3} = \frac{y + 1}{-3} = \frac{z}{9}$

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12. 6.66/6.66 points Previous Answers SCalc8 12.5.065. My Notes Ask Your Teacher

Find parametric equations for the line through the point $(0, 2, 2)$ that is parallel to the plane $x + y + z = 3$ and perpendicular to the line $x = 1 + t$, $y = 2 - t$, $z = 2t$. (Use the parameter t.)

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

$$3t,2-t,2-2t

)

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13. 6.66/6.66 points Previous Answers SCalc8 12.5.074. My Notes Ask Your Teacher

Find the distance between the given parallel planes.

$6z = 2y - 2x, \quad 9z = 1 - 3x + 3y$

$$1\sqrt{99}

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14. **6.66/6.66 points** **Previous Answers** SCalc8 12.5.516.XP.

My Notes **Ask Your Teacher**

Find parametric equations for the line. (Use the parameter t.)

The line of intersection of the planes $x + y + z = 7$ and $x + z = 0$

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

$$t,7,-t

)

Find the symmetric equations.

- (●) $x = -z,\ y = 7$
- ( ) $x = -y,\ z = 7$
- ( ) $x = y,\ z = 7$
- ( ) $y = z,\ x = 7$
- ( ) $x = z,\ y = 7$

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15. **6.76/6.76 points** **Previous Answers** SCalc8 12.5.520.XP.

My Notes **Ask Your Teacher**

Find an equation of the plane.

The plane that contains the line $x = 5 + 2t,\ \ y = t,\ \ z = 9 - t$ and is parallel to the plane $2x + 4y + 8z = 17$

$$2x+4y+8z=82

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