CENGAGE | WEBASSIGN

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(sign out)

12.5 Rectas y Planos (Homework)

INSTRUCTOR
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Current Score

QUESTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
POINTS	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓	1/1 ✓	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓	2/2 ✓

TOTAL SCORE

41/35	117.1%

Due Date Past Due

SAT, APR 4, 2020
11:59 PM CST

Request Extension

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

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1. 2/2 POINTS | PREVIOUS ANSWERS | **SCALC8 12.5.003.** | MY NOTES | ASK YOUR TEACHER

Find a vector equation and parametric equations for the line. (Use the parameter t.)

The line through the point $(5, 2.2, 3.6)$ and parallel to the vector $4\mathbf{i} + 3\mathbf{j} - \mathbf{k}$

$\mathbf{r}(t) =$ $\langle 5,2.2,3.6\rangle+t\langle 4,3,-1\rangle$

$(x(t), y(t), z(t)) =$ ($5+4t,2.2+3t,3.6-t$)

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2. 2/2 POINTS | PREVIOUS ANSWERS | **SCALC8 12.5.005.** | MY NOTES | ASK YOUR TEACHER

Find a vector equation and parametric equations for the line. (Use the parameter t.)

The line through the point $(1, 0, 2)$ and perpendicular to the plane $x + 3y + z = 4$

$\mathbf{r}(t) =$ $\langle 1,0,2\rangle+t\langle 1,3,1\rangle$

$(x(t), y(t), z(t)) =$ ($1+t,3t,2+t$)

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3. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.006. | MY NOTES | ASK YOUR TEACHER

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

The line through the origin and the point $(4, 5, -1)$

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

$$4t,5t,-t

$)$

Find the symmetric equations.

- $\frac{x}{4} = \frac{y}{5} = z$
- $\frac{x}{5} = \frac{y}{4} = -z$
- $x - 4 = y - 5 = z + 1$
- $\frac{x}{4} = \frac{y}{5} = -z$ ✓
- $x + 4 = y + 5 = z - 1$

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4. 2/2 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 $(1, 2, 0)$ and perpendicular to both $\mathbf{i} + \mathbf{j}$ and $\mathbf{j} + \mathbf{k}$

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

$$t+1,2-t,t

$)$

The symmetric equations are given by

- $x - 1 = -(y - 2) = z.$ ✓
- $x + 1 = -(y + 2), z = 0.$
- $x - 1 = y - 2 = -z.$
- $x + 1 = -(y + 2) = z.$
- $-(x - 1) = y - 2 = z.$

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5. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.011. | MY NOTES | ASK YOUR TEACHER

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

The line through $(-4, 2, 3)$ and parallel to the line $\frac{1}{2}x = \frac{1}{3}y = z + 1$

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

$$2t-4,3t+2,t+3

)

Find the symmetric equations.

- $\frac{x - 4}{2} = \frac{y + 2}{3} = z + 3$
- $\frac{x + 4}{2} = \frac{y + 2}{3} = z + 3$
- $\frac{x}{2} = \frac{y}{3} = z - 3$
- $\frac{x}{2} = \frac{y}{3} = z + 3$
- $\frac{x + 4}{2} = \frac{y - 2}{3} = z - 3$ ✓

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6. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.013. | MY NOTES | ASK YOUR TEACHER

Is the line through $(-4, -6, 1)$ and $(-2, 0, -3)$ parallel to the line through $(5, 17, 9)$ and $(2, 8, 15)$?

- Yes ✓
- No

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7. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.016. | MY NOTES | ASK YOUR TEACHER

(a) Find parametric equations for the line through (3, 1, 4) that is perpendicular to the plane $x - y + 2z = 5$. (Use the parameter t.)

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

$$t+3,1-t,2t+4

✔)

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

$(x, y, z) =$ (

xy-plane $$1,3,0

✔)

$(x, y, z) =$ (

yz-plane $$0,4,-2

✔)

$(x, y, z) =$ (

xz-plane $$4,0,6

✔)

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8. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.024. | MY NOTES | ASK YOUR TEACHER

Find an equation of the plane.

The plane through the point (9, 8, 7) and with normal vector $9\mathbf{i} + \mathbf{j} - \mathbf{k}$

$$9x+y-z=82

✔

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9. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.026. | MY NOTES | ASK YOUR TEACHER

Find an equation of the plane.

The plane through the point $(3, 0, 4)$ and perpendicular to the line $x = 5t$, $y = 9 - t$, $z = 2 + 7t$

$$5x-y+7z=43$$

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10. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.027. | MY NOTES | ASK YOUR TEACHER

Find an equation of the plane.

The plane through the point $(5, -3, -4)$ and parallel to the plane $3x - y - z = 6$

$$3x-y-z=22$$

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11. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.031. | MY NOTES | ASK YOUR TEACHER

Find an equation of the plane.

The plane through the points $(0, 5, 5)$, $(5, 0, 5)$, and $(5, 5, 0)$

$$x+y+z=10$$

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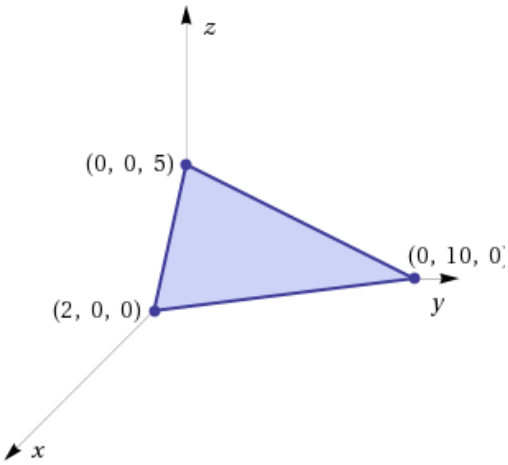
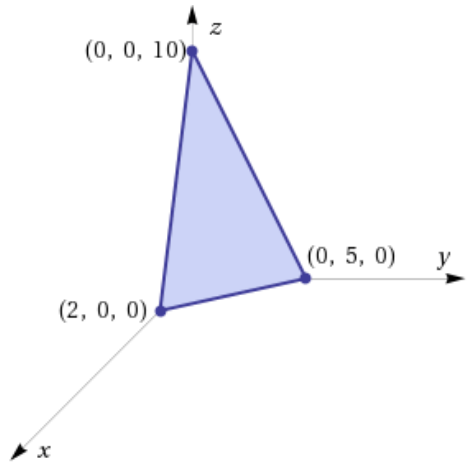
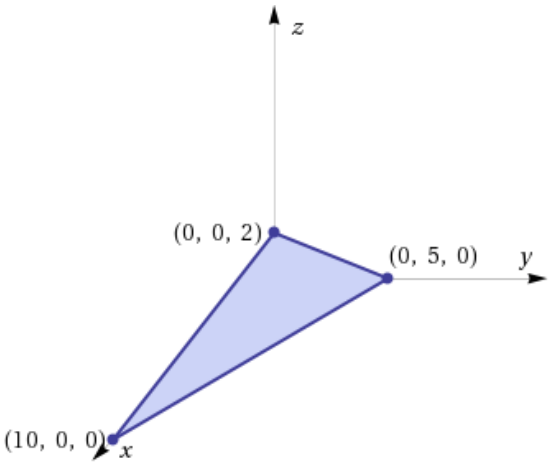
12. 1/1 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.041. | MY NOTES | ASK YOUR TEACHER

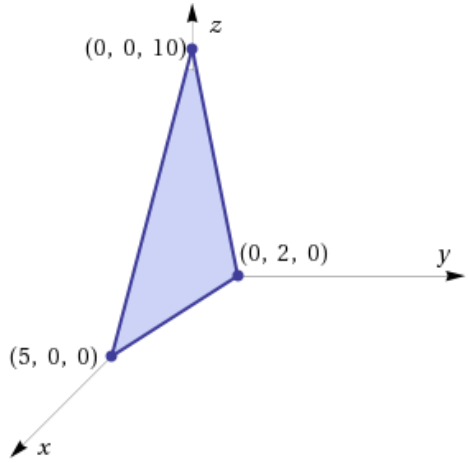
Use intercepts to help sketch the plane.

$5x + 2y + z = 10$









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13. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.045. | MY NOTES | ASK YOUR TEACHER

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

$x = 2 - 2t, \quad y = 3t, \quad z = 1 + t; \quad x + 2y - z = 4$

$(x, y, z) = ($

$$0,3,2

)

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14. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.049. | MY NOTES | ASK YOUR TEACHER

Find direction numbers for the line of intersection of the planes $x + y + z = 7$ and $x + z = 0$. (Enter your answers as a comma-separated list.)

$$1,0,-1

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15. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.057. | MY NOTES | ASK YOUR TEACHER

Consider the following planes.

$x + y + z = 7, \quad x + 6y + 6z = 7$

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

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

$$7,-5t,5t

)

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

28.54 °

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16. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.061. | MY NOTES | ASK YOUR TEACHER

Find an equation for the plane consisting of all points that are equidistant from the points $(1, 0, -2)$ and $(3, 14, 0)$.

$$x+7y+z=50

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17. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.065. | MY NOTES | ASK YOUR TEACHER

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

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

$$3t,1-t,2-2t

)

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18. 2/2 POINTS | PREVIOUS ANSWERS | SCALC8 12.5.071. | MY NOTES | ASK YOUR TEACHER

Find the distance from the point to the given plane.

$(1, -5, 3)$, $3x + 2y + 6z = 5$

$$67

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19. 2/0 POINTS PREVIOUS ANSWERS SCALC8 12.5.019. MY NOTES ASK YOUR TEACHER

Determine whether the lines L_1 and L_2 are parallel, skew, or intersecting.

L_1: $x = 12 + 8t$, $y = 16 - 4t$, $z = 4 + 12t$
L_2: $x = 2 + 8s$, $y = 6 - 4s$, $z = 8 + 10s$

- parallel
- skew
- intersecting

If they intersect, find the point of intersection. (If an answer does not exist, enter DNE.)

$(x, y, z) =$ (

$$DNE

)

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20. 2/0 POINTS PREVIOUS ANSWERS SCALC8 12.5.020. MY NOTES ASK YOUR TEACHER

Determine whether the lines L_1 and L_2 are parallel, skew, or intersecting.

L_1: $x = 5 - 12t$, $y = 6 + 3t$, $z = 7 - 6t$
L_2: $x = 6 + 8s$, $y = -2s$, $z = 7 + 4s$

- parallel
- skew
- intersecting

If they intersect, find the point of intersection. (If an answer does not exist, enter DNE.)

$(x, y, z) =$ (

$$DNE

)

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21. 2/0 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 $x - z = 1$ and $y + 4z = 2$ and is perpendicular to the plane $x + y - 4z = 3$

$$3x+y+z=5

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