

Welcome Back MYP Math 9!

Self-assess:

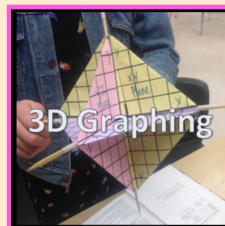
	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
Monday Date: <u>10-2</u> Topic: <u>Systems Quiz</u>	0 1 2	I began reviewing my notes for the upcoming unit test.
Tuesday Date: <u>10-3</u> Topic: <u>Systems of Equations Review</u>	0 1 2	I learned from my mistakes and practiced problems that were hard for me!
Wednesday Date: <u>10-4</u> Topic: <u>Linear Regression Application Review</u>	0 1 2	
Thursday Date: <u>10-5</u> Topic: <u>Study for Unit 1 Test</u>	0 1 2	
Friday Date: _____ Topic: _____	0 1 2	

Class Plan:

1. Warm-up
2. 3D Graphing

(Handout Question #1)

What do solutions look like?



3. Study for Unit 1 Test OR

4. Continue pondering graphing 3 variable systems

(Continue working on the handout)

Unit 1 Test
Tomorrow!

SOUTHWEST HIGH SCHOOL ADVISORY BELL SCHEDULE 2017-2018			
1 st Hour		8:05 – 8:48	
2 nd Hour		8:53 – 9:36	
	Advisory	9:41 – 10:23	
3 rd Hour		10:28 – 11:11	
4 th Hour		11:16 – 11:59	
5 th Hour		12:04 – 1:24	
	Lunch A	12:04 – 12:34	
	Class A	12:39 – 1:24	
	Class B	12:04 – 12:49	
	Lunch B	12:54 – 1:24	
6 th Hour		1:29 – 2:12	
7 th Hour		2:17 – 3:00	
ADVISORY DATES			
8/30/17	11/30/17	1/18/18	4/19/18
9/7/17	12/4/17	2/1/18	4/26/18
9/14/17	12/21/17	2/15/18	5/3/18
9/28/17		2/22/18	5/17/18
10/5/17		3/1/18	5/24/18
10/26/17		3/15/18	5/31/18
11/16/17		3/22/18	

Warm-up: Identify the solution.
Try a method of your choice!

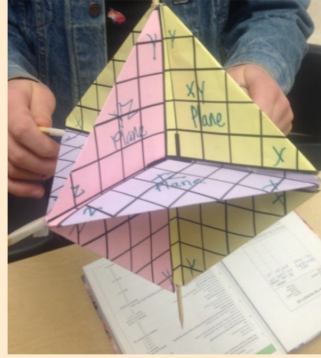
$$10x = -1 - 6y$$

$$0 = 12 + 12y + 20x$$

Done? Verify using a *different* method.

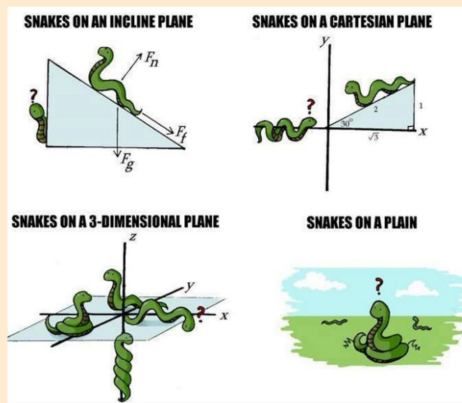
Warm-up:

*Which octant will produce a solution: (3, 4, 1)?



Label the 3 planes of the Positive Octant

Joke Break!



Solving by Graphing

3D Graphing
MYP 9 Math

Name _____ Hr _____

Once you have built your 3D model, you will use it to solve this 3x3 system by....graphing!

$$\begin{aligned}x + y + z &= 4 \\x - y + z &= 4 \\-x + y + z &= 2\end{aligned}$$

First we'll need some points to graph. Complete the following tables for each of the 3 equations. Note! There may be more than one correct answer for each row.

Do: 1) and consider where this solution is in your model
Whole group: c) and d)

First we'll need some points to graph. Complete the following tables for each of the 3 equations. Note! There may be more than one correct answer for each row.

1) a. Find values to finish each of the rows using this equation. Essentially, you need 3 numbers that sum to 4.

$$x + y + z = 4$$

x	y	z
0		
	0	
		0
0		

b. When you have a complete table, choose one marker color and graph all four points on the 3D model.

c. Once those are graphed, write down what you notice about where those points are below. What shape are they forming?

d. The point (2, 1, 1) is a solution to the equation $x + y + z = 4$. Where would it be graphed on your model?

Solution

1) a. Find values to finish each of the rows using this equation. Essentially, you need 3 numbers that sum to 4.

$$x + y + z = 4$$

x	y	z
0	4	0
2	0	2
3	1	0
0	1	3

b. When you have a complete table, choose one marker color and graph all four points on the 3D model.

c. Once those are graphed, write down what you notice about where those points are below. What shape are they forming?

A plane! A quadrilateral.

d. The point (2, 1, 1) is a solution to the equation $x + y + z = 4$. Where would it be graphed on your model?

In "space", on the $x+y+z=4$ plane.
Between the points, in the octant.

Recall yesterday's Warm-up: Where is this solution?

$$\begin{cases} x + y + z = 4 \\ x - y + z = 4 \\ -x + y + z = 2 \end{cases}$$

Handwritten solution steps:

$$y = 0$$

$$\rightarrow 2z = 6 \quad \rightarrow 2y + 2z = 6$$

$$z = 3$$

$$y + z = 3$$

$$y + 3 = 3$$

$$y = 0$$

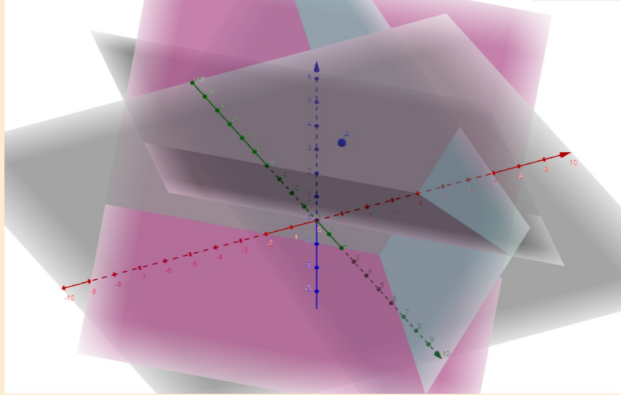
$$x + 0 + 3 = 4$$

$$x + 3 = 4$$

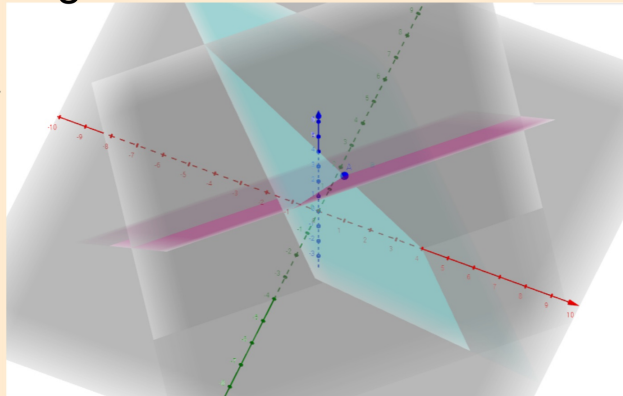
$$x = 1$$

The solution is boxed as $(1, 0, 3)$.

Geogebra.com



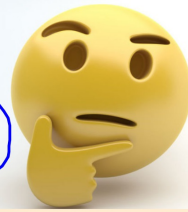
Geogebra.com



Unit 1: Linear Relationships

How can we study for tomorrow's Unit 1 Test?

- Look @ notes + online afterschool before school
- Go over old quizzes + sheets
- Reviews videos Khan....



Unit 1: Linear Relationships

How can we study for tomorrow's Unit 1 Test?



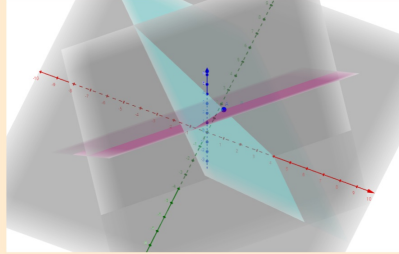
Unit 1: Linear Relationships

DO: Study for Unit 1 Test

***Look over quizzes/notes/etc)

***Or continue working on the 3D graphing handout

**Unit 1 Test
Tomorrow!**



2) Complete the following tables and choose a DIFFERENT color for each equation to graph the points on your model.

Equation: $x - y + z = 4$

x	y	z
0		
	0	
		0
	0	

Equation: $-x + y + z = 2$

x	y	z
0		
	0	
		0
		0

Solution

2) Complete the following model.

Equation: $x - y + z =$

3) Add points as you like. All the points are possible solutions to the system.

Additional points between

3	
2	

4) In 2 variable problems, each equation represents a LINE, and the intersection of two lines is the solution to the system of those two lines.
In 3 variable problems, each equation represents a plane.

What is the visual image for the solution to a system of 3 variables?
A point.



What would it look like if there were NO solution to a 3 variable problem?
Three planes that never intersect.

Or...
What would it look like if there were INFINITE solutions to a 3 variable problem?
All planes are the same.

Are there any other possible answers for a 3 variable problem?
If two planes are parallel, then the third could intersect them both. In this case, there would be two lines of intersection. However, neither would be a solution to the entire system.

Graph the points on your model.

Visualize where the planes intersect. Where else would they intersect?

space

0	
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Solution

2) Complete the following tables and choose a DIFFERENT color for each equation to graph the points on your model.

Equation: $x - y + z = 4$

x	y	z
0	2	6
1	0	3
5	1	0
2	0	2

Equation: $-x + y + z = 2$

x	y	z
0	1	1
2	0	0
-1	1	0
0	2	0

3) Add points as you need to in order to find the solution. If you are struggling, try to visualize where ALL the points are on a specific equation. We can only see points on the axes right now. Where else might points be that would fit some of your equations? (Go back to your answer for problem 1d.)

4) In 2 variable problems, each equation represents a LINE, and the intersection of two lines is the solution to the system of those two lines.

In 3 variable problems, each equation represents a _____.

What is the visual image for the solution to a system of 3 variables?

Solution

3) Add points as you need to in order to find the solution. If you are struggling, try to visualize where ALL the points are on a specific equation. We can only see points on the axes right now. Where else might points be that would fit some of your equations? (Go back to your answer for problem 1d.)

Additional points would be in the space between our planes.

What would it look like if there were NO solution to a 3 variable problem?

What would it look like if there were INFINITE solutions to a 3 variable problem?

Are there any other possible answers for a 3 variable problem?

Solution

4) In 2 variable problems, each equation represents a LINE, and the intersection of two lines is the solution to the system of those two lines.
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What is the visual image for the solution to a system of 3 variables?

A point.





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Are there any other possible answers for a 3 variable problem?

If two planes are parallel, then the third could intersect them both. In this case, there would be two lines of intersection. However, neither would be a solution to the entire system.

Exercises...

Study for your Unit 1 Test!