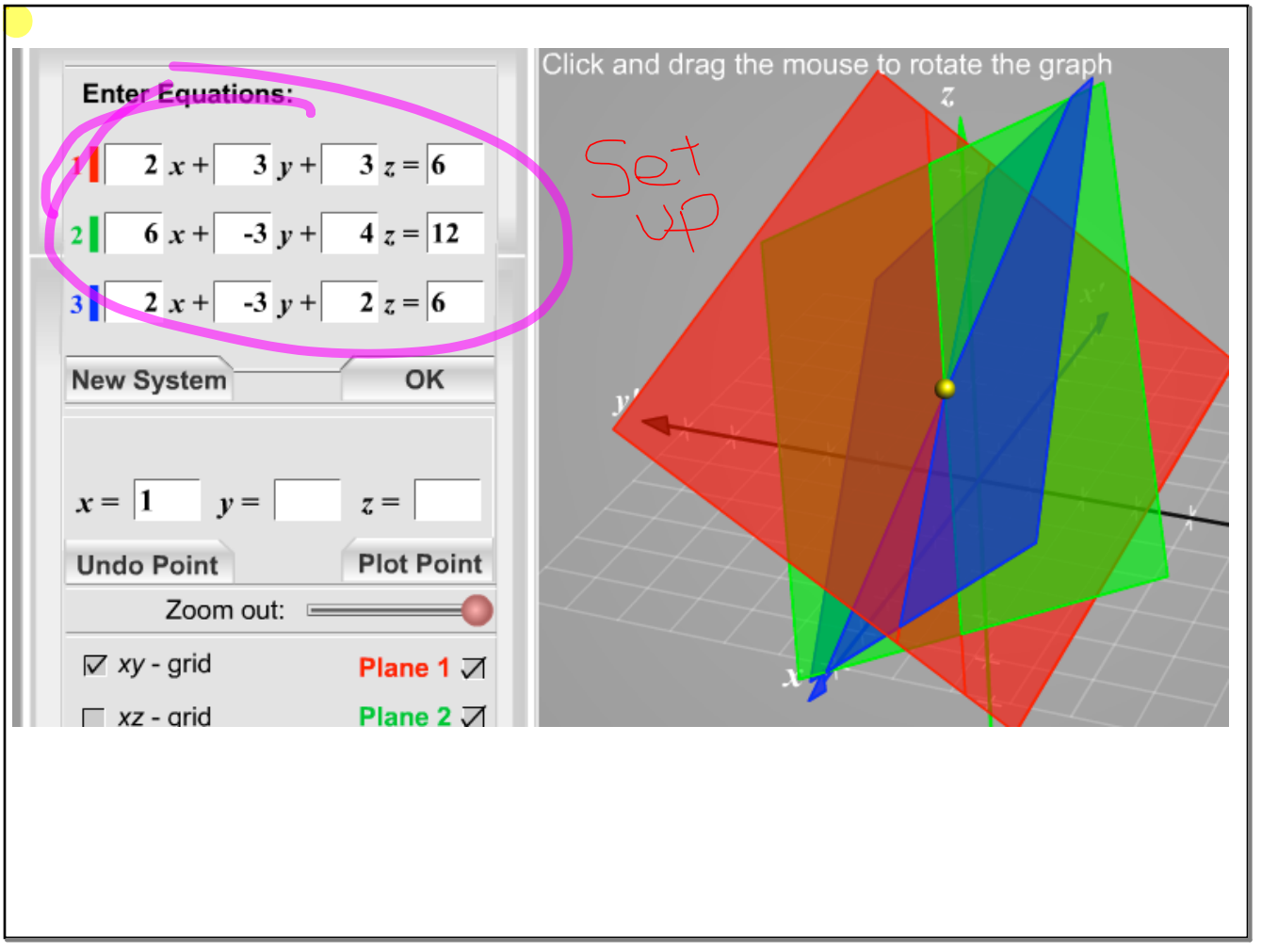
can create 3 planes, turn 1 on at a time

http://technology.cpm.org/general/3dgraph/

April 12, 2019



April 12, 2019

Warm up - Do # 1 - 5

Pick up the Ch. 6 HW Recording Sheet

Check Homework - it is due today

Textbook

Algebra 2 -Volume 2

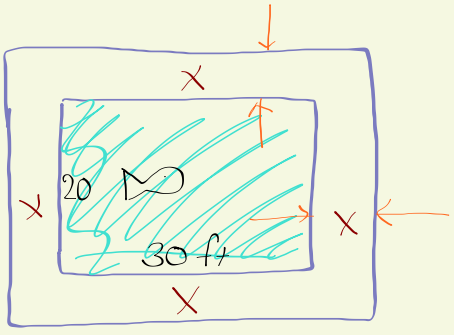
On the inside back cover, write:

name/period/Mr. C

April 12, 2019

The Fish Pond Side Walk

April 12, 2019

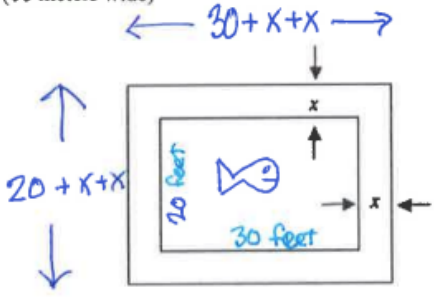


Area of Pond Water
=
Area of Concrete
= 159 ft^2
TOTAL Area
=

April 12, 2019

A rectangular pond 30 feet by 20 feet is going to be built. Outside the water area, the builders want a concrete walkway of uniform width on all sides (x meters wide)

The width is 1.5 feet



Area of Water
$= 30 \times 20 = 600\ ft^2$

Area of Concrete
$= 159\ ft^2$

TOTA Area of Full Rectangle $759\ ft^2$

The area of the concrete walkway (not including the pond) is to be a maximum of 159 ft^2 to keep costs at a minimum.

Length x width = Area

$(30+2x)(20+2x) = 759$

Simplify

$600 + 60x + 40x + 4x^2 = 759$

$4x^2 + 100x + 600 = 759$

$4x^2 + 100x - 159 = 0$

$a = 4$

$b = 100$

$c = -159$

$$X = \frac{-(100) \pm \sqrt{(100)^2 - 4(4)(-159)}}{2(4)}$$

$$= \frac{-100 \pm \sqrt{12544}}{8}$$

$$= \frac{-100 + 112}{8}$$

$$= \begin{cases} \frac{-100+112}{8} = 1.5 \\ \frac{-100-112}{8} = -26.5 \end{cases}$$

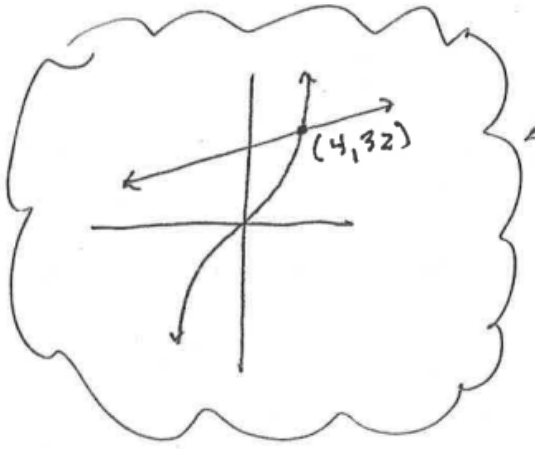
↑ impossible for a width

ay of ch. 6

⇒ Write down the final answers

#52 Solve the equation graphically $0.5x^3 = \frac{1}{2}x + 30$

Huston's work →



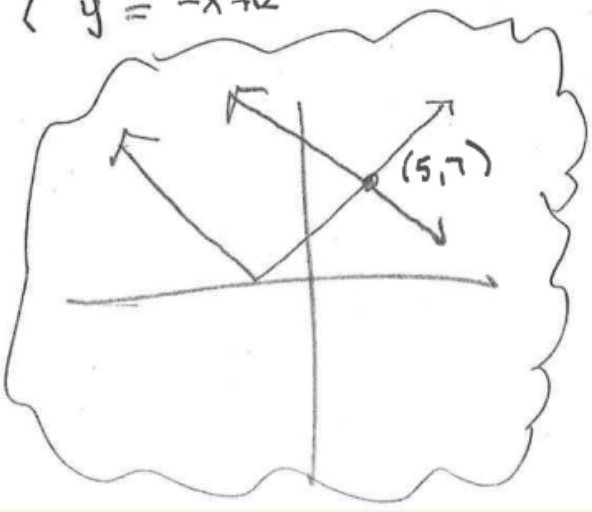
← Sketch from his GDC

Final answer _____

#53 Solve the system of equations

$$\begin{cases} y = |x+2| \\ y = -x+12 \end{cases}$$

his sketch



HUSTON'S WORK

Final answer (5, 7)

April 12, 2019

Warm up

1.

$14^{5x} = 700$

exponent

base

$\log_6 Z = 5.3$

base

exponent

$\log_{14} 700 = 5x$

$6^{5.3} = Z$

2.

$16 = 2^4$

$\frac{1}{8} = 2^{-3}$

$\sqrt{2} = 2^{\frac{1}{2}}$

$\sqrt[3]{4} = \sqrt[3]{2^2}$

$= 2^{\frac{2}{3}}$

$\sqrt[3]{2} = 2^{\frac{1}{3}}$

April 12, 2019

Prediction: If two quantities, say, x and 6, are equal, are their logs equal? namely is $\log x = \log 6$? Circle your prediction: true or false

The answer to the question above is true. In fact, as long as the base is equal, both sides will be equal after you "take the log of both sides". For example if n = 5,

then $\log_2 n = \log_2 5$ or $\log_3 n = \log_3 5$ or $\log_4 n = \log_4 5$, or for any base.

$n = 5$

You can use the idea above to solve *log equations* like:

$$\log_2(x-7) = \log_2(3)$$

$x - 7 = 3$

$x = 10$

lify: (5)

$d^4d^8 =$ d^{12} $(m^4)^3 =$ m^{12} $(x^2y)(x^5y^3) =$ x^7y^4

$(9p^3)^2 =$ $81p^6$ $(-2n^6)^2 =$ $4n^{12}$ $(-2wy^3)^3 =$ $-8w^3y^9$

$9^2(p^3)^2$

April 12, 2019

$\frac{12c^3}{8c^3} = \frac{3}{2}$

$\frac{20x^2}{15x^7} = \frac{4}{3x^5}$

$\frac{a}{(-2a)^2} = \frac{1}{4a}$

$\frac{a}{4a^2}$

5. Answer true or false to each of the questions below:

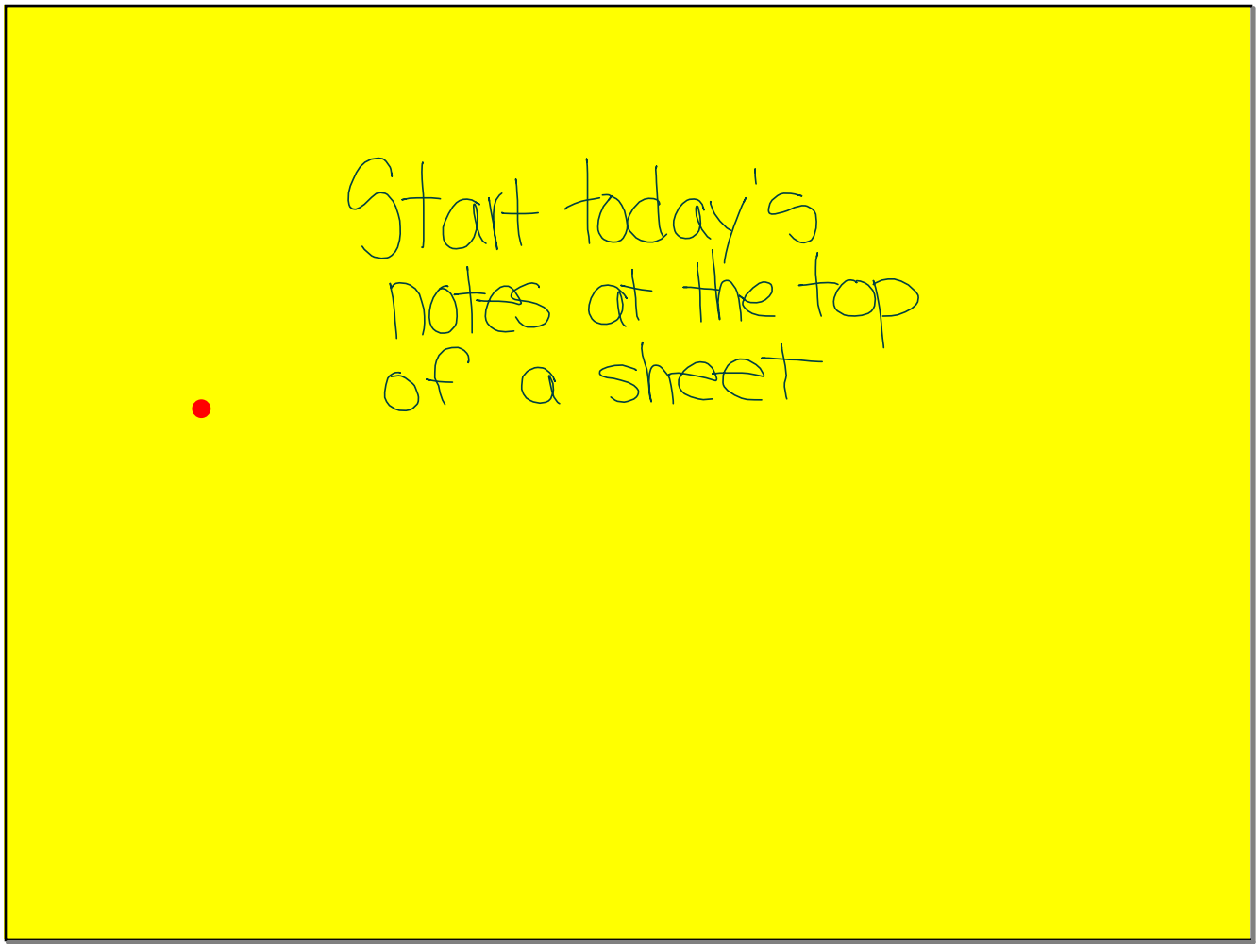
___T___ Once class starts, you should only write on your homework with a pen of a different color.

___T___ By the time you finish self-correcting your HW, your score should be written in pen both on your own HW paper and the recording sheet.

___T___ A largest portion of your HW score is whether you are showing detail on all problems requiring a process.

___T___ When absent, I always check Mr. Cedarlund's website before I get back to class.

April 12, 2019



Start Chapter 6

6.1 Solving 3 by 3 systems of equations.

we will be skipping the content in the first 3 sections.

6.2 More with logaritms

This week: Start Ch. 6

Likely date for next test: Mon, April 29th

April 12, 2019

Aim Solve Systems of Equations with three variables.

What do solutions look like?

What does the graphical intersection look like?

how would you start to solve ?

$3(12x - 2y = 16)$

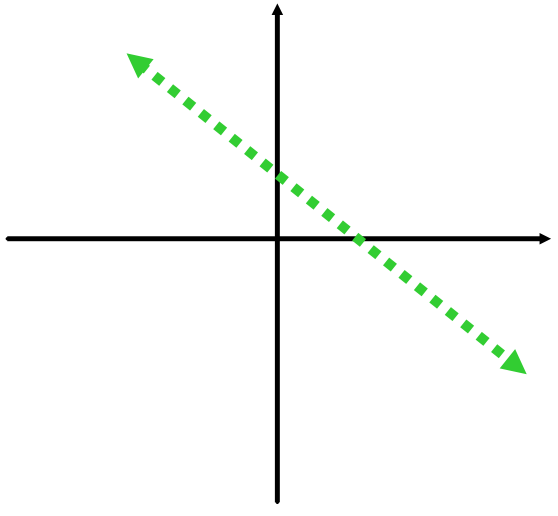
$2(30x + 3y = 20)$

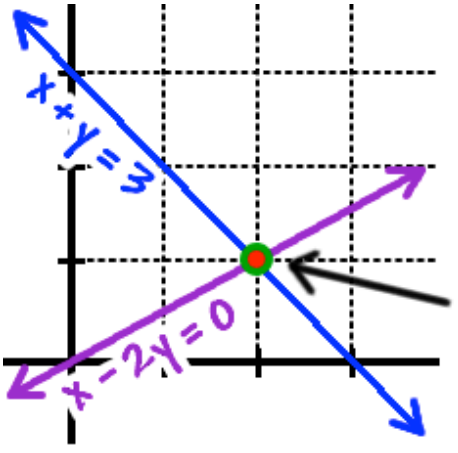
$$12x - 2y = 16$$
$$30x + 3y = 20$$

how would you start to solve ?

$$a + b + c = 5$$
$$b + c = 3$$
$$a + c = 12$$

How could one represent the solution $x+2y=5$ graphically ?



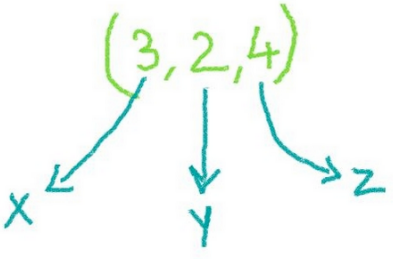

x + y = 3
x - 2y = 0

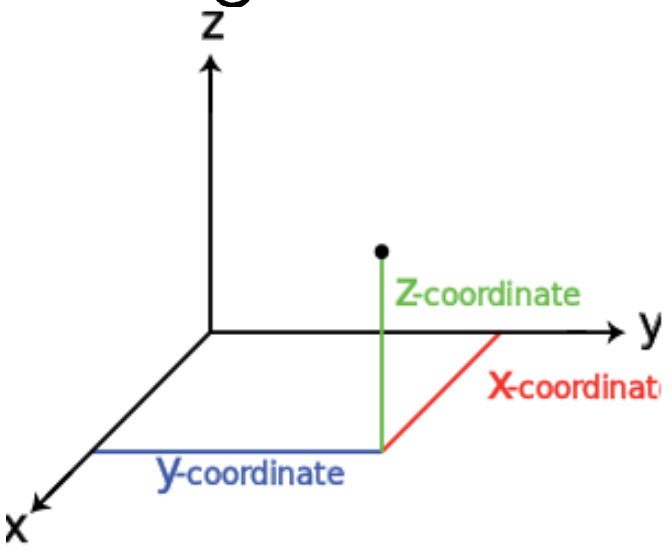

$
Company Z
Company K
20
15
10
5
10 20 30 40
Minutes

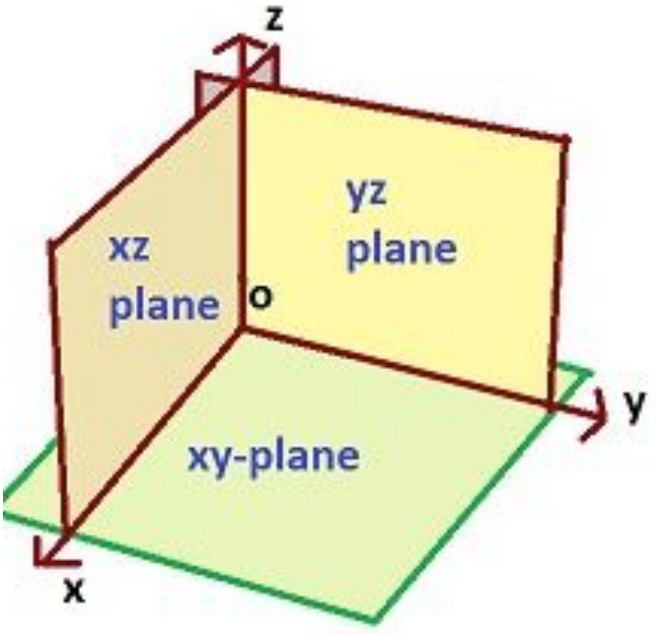
How could one represent the solution

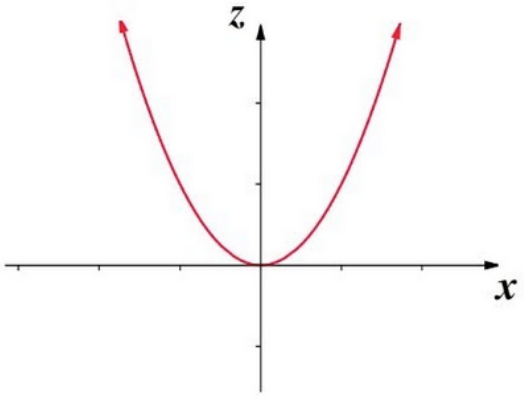
$x + 2y + z = 5$ graphically ?

A lot of possibilties are opened up with this system

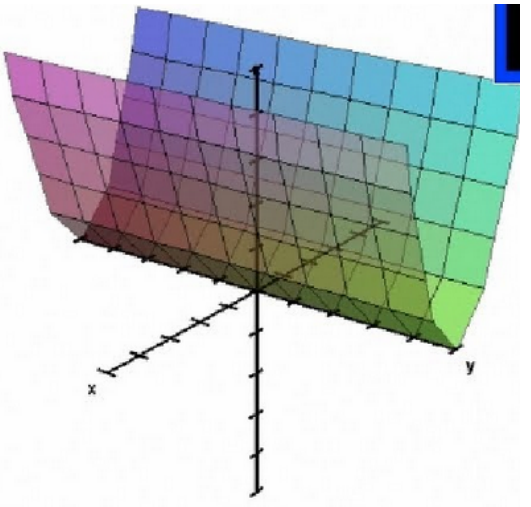





z
yz
plane
xz
plane
o
y
xy-plane
x

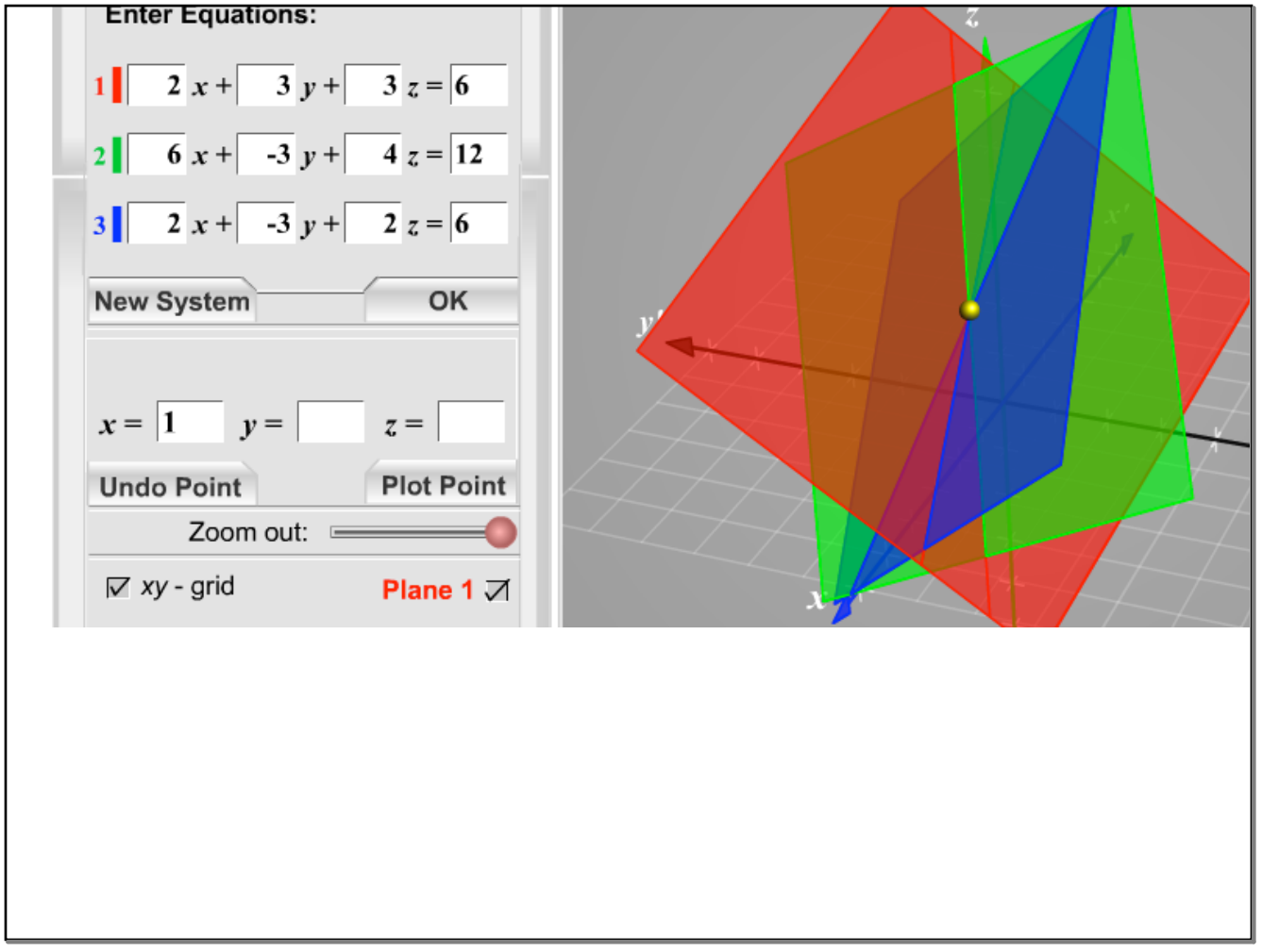


$\mathbb{R}^2$

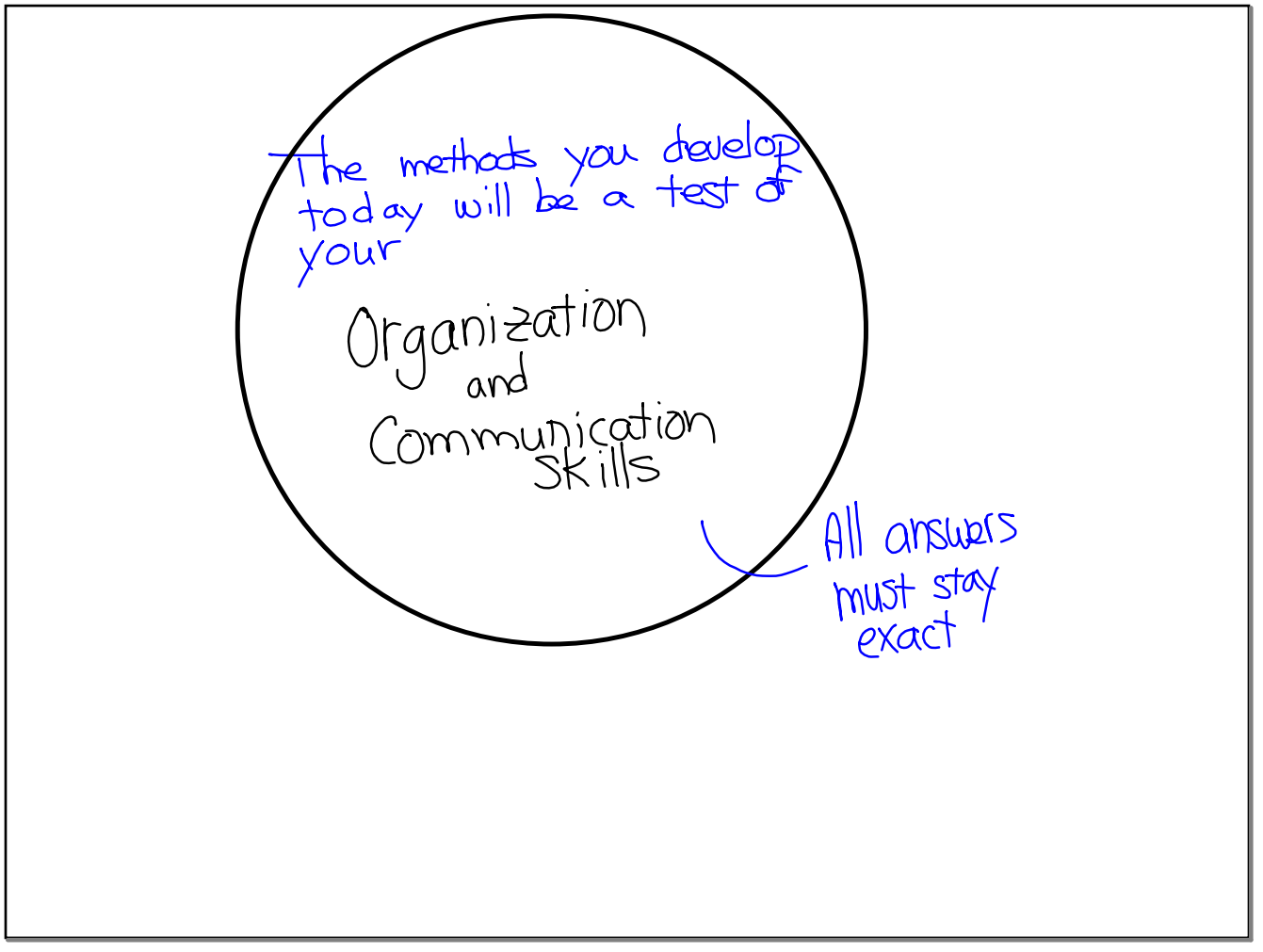


$\mathbb{R}^3$

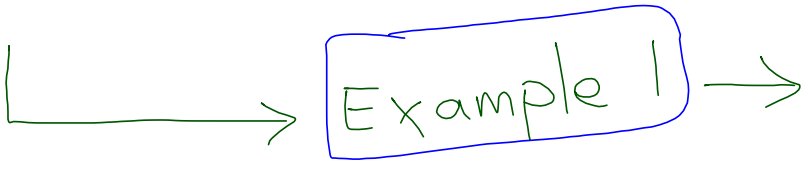
April 12, 2019



April 12, 2019



and
patience



I. $a + 3b + 2c = -2$

II. $2a - b - c = -9$

III. $a - 2b + 5c = 1$

eliminate "c"

I + 2II

III + 5II

$a + 3b + 2c = -2$

$4a - 2b - 2c = -18$

$5a + 1b = -20$

$a - 2b + 5c = 1$

$10a - 5b - 5c = -45$

$11a - 7b = -44$

eliminate "b"

① $5a + b = -20$

② $11a - 7b = -44$

7①+②

$35a + 7b = -140$

$11a - 7b = -44$

$46a = -184$

$\frac{46a}{46} = \frac{-184}{46}$

$a = -4$

plug $a = -4$ into ①

$5(-4) + b = -20$

$-20 + b = -20$

$b = 0$

plug $a = -4, b = 0$

$2a - b - c = -9$

$2(-4) - (0) - c = -9$

$-8 - c = -9$

$-c = -1$

$c = 1$

$(-4, 0, 1)$

x, y, z

Sometimes solutions
can look like .....

$$\left(\frac{1}{2}, -\frac{1}{3}, 2\right)$$

Very important to keep all values exact.

Example 2

[start at the top of a page]

I $x + y + 3z = 3$

II $2x + y + 6z = 2$

III $2x - y + 3z = -7$

eliminate "y"

I + III

$x + y + 3z = 3$

$2x - y + 3z = -7$

$3x + 6z = -4$

II + III

$2x + y + 6z = 2$

$2x - y + 3z = -7$

$4x + 9z = -5$

① $3x + 6z = -4$

② $4x + 9z = -5$

$4(①) + -3(②)$

$12x + 24z = -16$

$-12x - 27z = 15$

$-3z = -1$

$z = \frac{1}{3}$

Ⓐ $x+y+3z=3$
Ⓑ $2x+y+6z=2$
Ⓒ $2x-y+3z=-7$

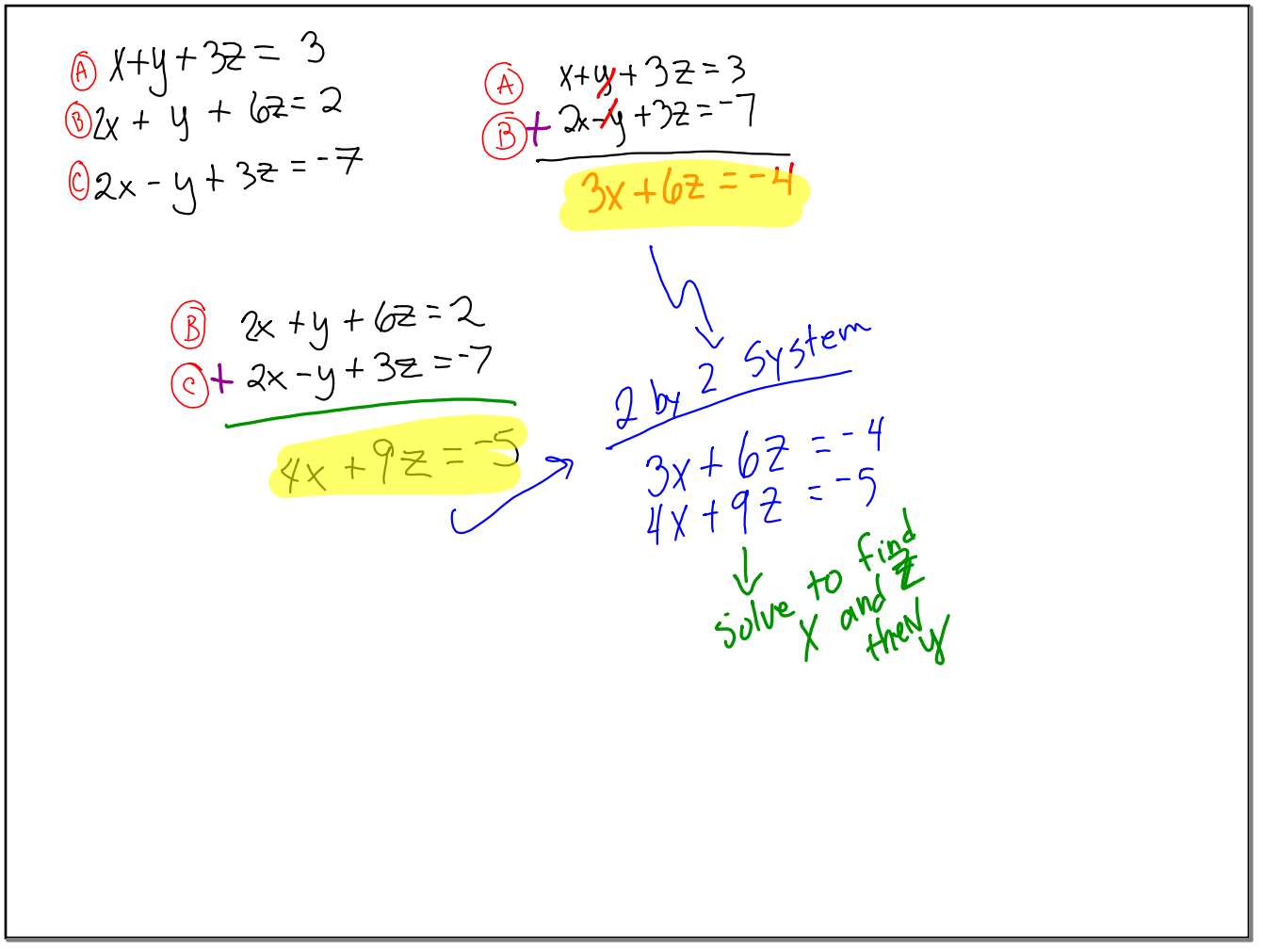
Eliminate y's

Ⓐ $x+y+3z=3$
Ⓒ $+\ 2x-y+3z=-7$

$3x+6z=-4$

Ⓑ $2x+y+6z=2$
Ⓒ $+\ 2x-y+3z=-7$

$4x+9z=-5$


Ⓐ x+y+3z = 3
Ⓑ 2x + y + 6z = 2
Ⓒ 2x - y + 3z = -7
Ⓐ x+y+3z=3
Ⓑ + 2x-y+3z=-7
3x+6z=-4
Ⓑ 2x+y+6z=2
Ⓒ + 2x-y+3z=-7
4x+9z=-5
2 by 2 system
3x+6z=-4
4x+9z=-5
solve to find z
x and then y

$\left(-2, 4, \frac{1}{3}\right)$

or $x = 2$

$y = 4$

$z = \frac{1}{3}$

April 12, 2019

What was the main goal for today?

Assignment from Volume 2 of our textbook

6....12, 14, 25, 38, 41ac, 51, 52

Heads up:

There may be random mid chapter recording checks to see if you are following the guidelines listed on the top of the HW Recording Sheet.

April 12, 2019