Go pick up in the library

Textbook

Algebra 2 -Volume 2

On the inside back cover, write:

name/period/Mr. C

Pick Up the Warm Up and

Pick up the Ch. 6 HW Recording Sheet

1.

$14^{5x} = 700$ (exponent, base)

$5x = \log_{14}(700)$

$\log_6 Z = 5.3$ (base, exponent)

$6^{5.3} = Z$

2.

$16 = 2^4$

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

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

$\sqrt[3]{4} = 4^{\frac{1}{3}} \rightarrow (2^2)^{\frac{1}{3}}$

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

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.

$n = 5$

$\log_6(n) = \log_6(5)$

$n = 5$

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

$(9p^3)^2 =$ $9^2(p^3)^2$ $81p^6$

$(-2n^6)^2 =$ $(-2)^2(n^6)^2$ $4n^{12}$

$(-2wy^3)^3 =$ $(-2)^3(w)^3(y^3)^3$ $-8w^3y^9$

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

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

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

$\frac{\cancel{a}1}{4\cancel{a^2}a}$

$\frac{1}{4a}$

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

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

____ 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.

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

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

6. Multiple Choice. The real reason for Mr. Cedarlund's scar is:

a) He fell off a sled going down a steep snowy hill.
b) He really DID get in a fight at a restaurant when a Boise State fan through a French fry at him.
c) His face attacked the sharp claws of his new puppy.
d) He did not wear enough sun screen or hats when he was younger.

Start today's notes at the top of a sheet

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: Wed, January 17th

Fri, April 28th

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 ?

$12x - 2y = 16$
$30x + 2y = 68$

Did anyone use SUBSTITUTION ?

$12x - 2y = 16$ $\quad 30x + 2y = 68$

$2y = 68 - 30x$

$y = 34 - 15x$

Did anyone use Elimination ?

$12x - 2y = 16$

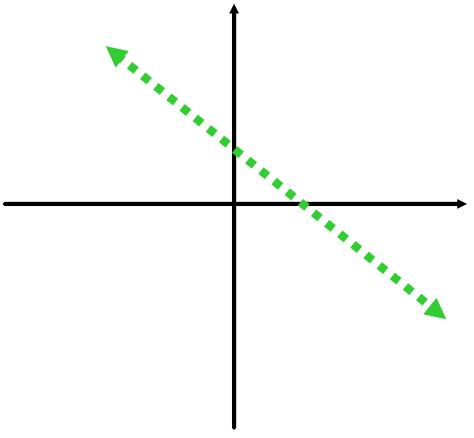
$+ \; 30x + 2y = 68$

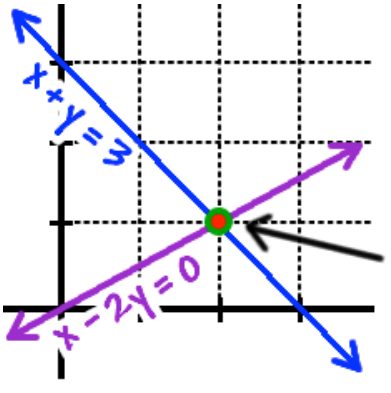
$42x = 84$

how would you start to solve ?

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

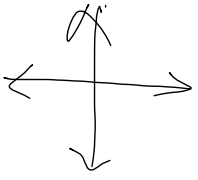
How could one represent the solution $x+2y = 5$ graphically ?





How could one represent the solution

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

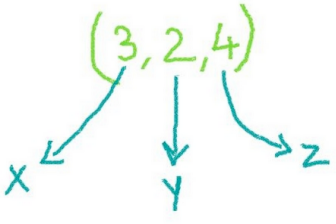


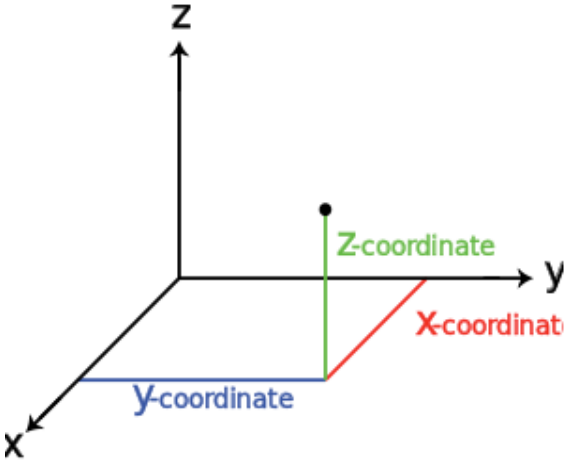
$x + 2y - 6z = 12$

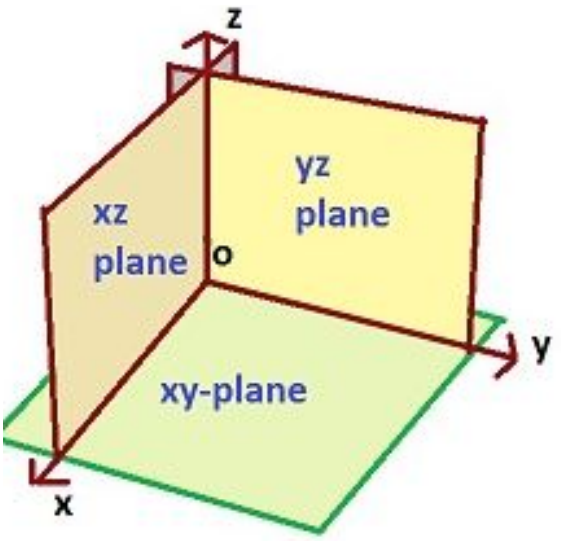
$2x + 3y + 8z = 24$

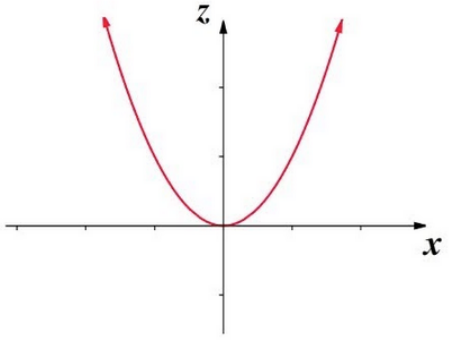
$3x - 10y + 7z = 8$

A lot of possibilties are opened up with this system

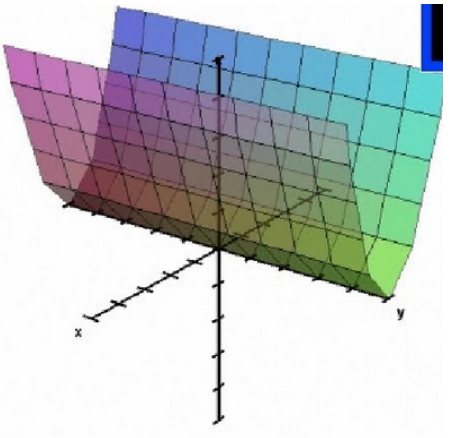




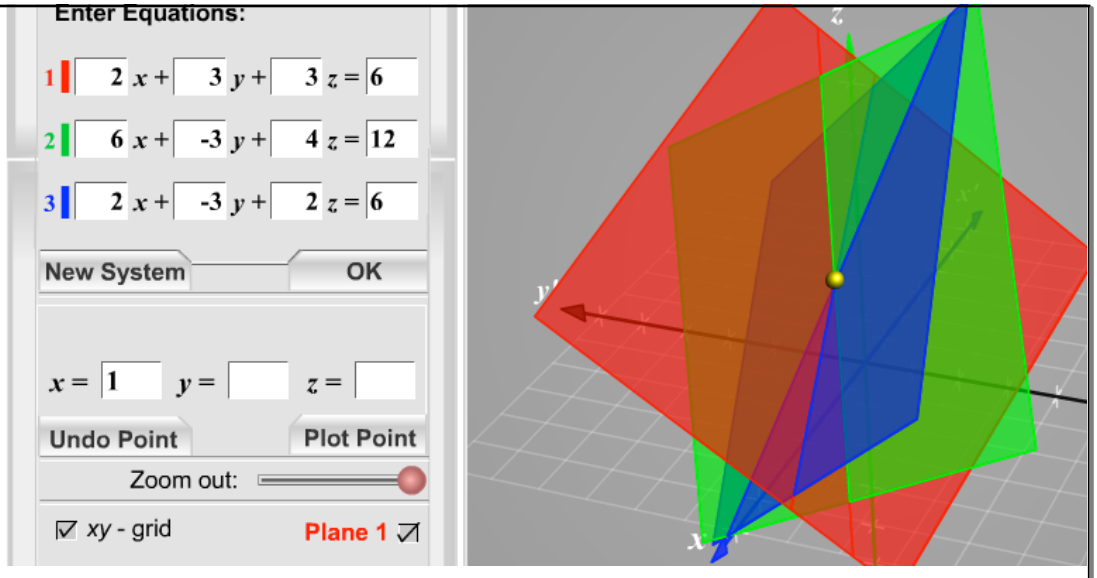




$\mathbb{R}^2$



$\mathbb{R}^3$



The methods you develop today will be a test of your

Organization and Communication Skills

All answers must stay exact

and
patience

Example 1 →

I. $a + 3b + 2c = -2$
II. $2a - b - c = -9$
III. $a - 2b + 5c = 1$

I. $a + 3b + 2c = -2$ $\xrightarrow{-2}$ $-2a - 6b - 4c = 4$
II. $2a - b - c = -9$ $\hookrightarrow$ $2a - b - c = -9$

(A) $-7b - 5c = -5$

I. $a + 3b + 2c = -2$ $\xrightarrow{-1}$ $-a - 3b - 2c = 2$
III. $a - 2b + 5c = 1$ $\hookrightarrow$ $a - 2b + 5c = 1$

(B) $-5b + 3c = 3$

(A) $-7b - 5c = -5$ $\xrightarrow{3}$ $-21b - 15c = -15$

(B) $-5b + 3c = 3$ $\xrightarrow{5}$ $-25b + 15c = 15$

$-46b = 0$

$b = 0$

$-5(0) + 3c = 3$

$3c = 3$

$c = 1$

$a = -4$
$b = 0$
$c = 1$

(I) $a + 3(0) + 2(1) = -2$

$a + 2 = -2$

$a = -4$

$\left(\frac{13}{37}, \frac{5}{3}\right)$

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

Ⓐ $x+y+3z = 3$

Ⓑ $2x + y + 6z = 2$

Ⓒ $2x - y + 3z = -7$

Eliminate y's

Ⓐ $x+y+3z=3$

Ⓒ + $2x-y+3z=-7$

$3x+6z=-4$

Ⓑ $2x+y+6z=2$

Ⓒ + $2x-y+3z=-7$

$4x+9z=-5$

2 by 2 System

$3x+6z=-4$

$4x+9z=-5$

↓ solve to find z, x and then y

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

Ⓐ $x+y+3z=3$
Ⓑ + $2x-y+3z=-7$
$3x+6z=-4$

Ⓑ $2x+y+6z=2$
Ⓒ + $2x-y+3z=-7$
$4x+9z=-5$

2 by 2 system

$3x+6z=-4$
$4x+9z=-5$

↓ solve to find x and z then y

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

or $x=2$
$y=4$
$z=\frac{1}{3}$

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.

Nature of this work

- Need lots of space
  - Keep the font size small.
  - Stay organized.
- Can be frustrating if you make silly mistakes
  - Don't be in a rush.