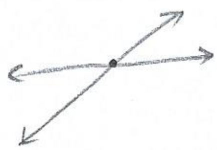
Rashedul Islam
CRMA 0372
College Readiness Algebra II
Ms. Riley

11/29/2018

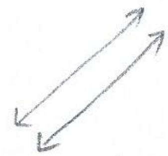
Solving systems of Linear Equations :

Case 1 :



There is one solution $\{x, y\}$
The system is called consistent
because there is a solution.
The equations are independent
because they are not the same
equation.

Case 2 :



There is no solution. $\emptyset$
Since there is no solution,
the system is inconsistent.
The equations are independent
because they are not the same equation.

Case 3 :

Both equations are in the same line.
There are an infinite number of solutions.
$\{(x, y) \mid Ax + By = C\}$
Since there is a solution, the system is consistent.
The equations are dependent, because they are
the same equations.

* $\log_b 1 = ?$

$b^? = 1$

$? = 0$

| $\log_b x = y$

| $b^y = x$

* $\log_4 4 + \log_2 1 = 1 + 0 = 1$

* $\log_5\left(\sqrt[4]{\frac{w^3 z}{x^2}}\right) = \log_5\left(\frac{w^3 z}{x^2}\right)^{1/4} = \frac{1}{4}\left[\log_5\left(\frac{w^3 z}{x^2}\right)\right]$

$= \frac{1}{4}\left(\log_5 w^3 + \log_5 z - \log_5 x^2\right)$

$= \frac{1}{4}\left(3\log_5 w + \log_5 z - 2\log_5 x\right)$

$= \frac{3}{4}\log_5 w + \frac{1}{4}\log_5 z - \frac{1}{2}\log_5 x$

* $\log_5 8 = \frac{\log 8}{\log 5} \approx 1.3$

* $6^{x-8} = 13^{-6x}$

$\log 6^{x-8} = \log 13^{-6x}$

$(x-8)\log 6 = -6x\log 13$

$x\log 6 - 8\log 6 = -6x\log 13$

$x\log 6 + 6x\log 13 = 8\log 6$

$x(\log 6 + 6\log 13) = 8\log 6$

$x = \frac{8\log 6}{\log 6 + 6\log 13}$