Name: KEY
ALGEBRA 2 CC

Date: 11/15/11
TROICI

LESSON #2B: SYSTEMS OF EQUATIONS (WITH 3 VARIABLES) – DAY 2

DO NOW: Use your MATRIX key on the calculator to answer the Do Now.

Which value is *not* contained in the solution of the system shown below?

$$a + 5b - c = -20$$
$$4a - 5b + 4c = 19$$
$$-a - 5b - 5c = 2$$

(1) -2
(2) 2
(3) 3
(4) -3

CALCULATOR STEPS

1) 2^{nd} x^{-1} **(matrix),** ←, edit, enter

2) Type in the # of rows by columns (usually 3 x 4)

3) Type in the coefficients. When there is no coefficient, be sure to enter in zero.

*4) 2^{nd} quit (mode) to get to the home screen

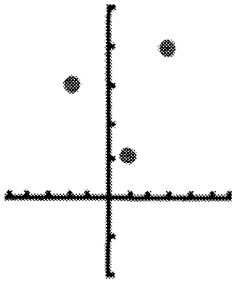
5) 2^{nd} x^{-1} **(matrix)** ⟶ math, scroll to B: rref(

6) 2^{nd} x^{-1} **(matrix),** #1, A, enter

1) Find the equation of the form $y = ax^2 + bx + c$ that satisfies the points $(1, 6)$, $(3, 20)$, **and** $(-2, 15)$.

x y x y x y

$y = 2x^2 - 1x + 5$



$6 = a(1)^2 + b(1) + c \rightarrow 6 = a + b + c$
$20 = a(3)^2 + b(3) + c \rightarrow 20 = 9a + 3b + c$
$15 = a(-2)^2 + b(-2) + c \rightarrow 15 = 4a - 2b + c$

$-1(6 = a + b + c)$
$20 = 9a + 3b + c$

$-6 = -a - b - c$
$20 = 9a + 3b + c$
$14 = 8a + 2b$

$+(6 = a + b + c)$
$15 = 4a - 2b + c$

$-6 = -a - b - c$
$+15 = 4a - 2b + c$
$9 = 3a - 3b$

$3(14 = 8a + 2b)$
$2(9 = 3a - 3b)$

$42 = 24a + 6b$
$+18 = 6a - 6b$
$60 = 30a$
$a = 2$

$9 = 3a - 3b$
$9 = 3(2) - 3b$
$9 = 6 - 3b$
$3 = -3b$
$b = -1$

$6 = a + b + c$
$6 = 2 + -1 + c$
$6 = 1 + c$
$C = 5$

2) Find the equation of the form $y = ax^2 + bx + c$ whose graph passes through the points $(1, -1)$, $(3, 23)$, and $(-1, 7)$.

$-1 = (1)^2a + (1)b + C$ $\quad a+b+C=-1$

$23 = (3)^2a + (3)b + C$ $\quad 9a+3b+C=23$

$7 = (-1)^2a + (-1)b + C$ $\quad a-b+C=7$

$a+b+C=-1$
$a-b+C=7$
$2a+2C=6$

$9a+3b+C=23$
$+3(a-b+C=7)$

$9a+3b+C=23$
$+3a-3b+3C=21$
$12a+4C=44$

$-2(2a+2C=6)$
$12a+4C=44$

$-4a-4C=-12$
$12a+4C=44$
$8a=32$
$a=4$

$2a+2C=6$
$2(4)+2C=6$
$8+2C=6$
$2C=-2$
$C=-1$

$a+b+C=-1$
$4+b+-1=-1$
$3+b=-1$
$b=-4$

$$y = 4x^2 - 4x - 1$$

CLEARING DATA:

To clear all data from a list: Press **STAT**. From the **EDIT** menu, move the cursor up **ONTO** (**L1**). Press **CLEAR**. Move the cursor down. **NOTE:** The list entries will not disappear until the cursor is moved down. (**Avoid** pressing **DEL** as it will delete the entire column.)

CALCULATOR STEPS TO FINDING REGRESSION EQUATION

STEP 1: Enter data into lists: [STAT , ENTER]

STEP 2: Choose the Regression model needed: [STAT , CALC, select # or letter of Reg, Hit ENTER 5 times to CALCULATE]