

# Study Skills in Action

## Viewing Math as a Foreign Language

Learning math requires more than just completing homework problems. For instance, learning the material in a chapter may require using approaches similar to those used for learning a foreign language in that you must:

- understand and memorize vocabulary words;
- understand and memorize mathematical rules (as you would memorize grammatical rules); and
- apply rules to mathematical expressions or equations (like creating sentences using correct grammar rules).

You should understand the vocabulary words and rules in a chapter as well as memorize and say them out loud. Strive to speak the mathematical language with fluency, just as a student learning a foreign language must strive to do.

**Matrix**

A rectangular array of real numbers.  
Here is a 2 x 3 matrix:

	column		
		↓	
row →	[ 2 3 4 ]		
	[ 0 1 5 ]		

**Cramer's Rule for the system**

$$\begin{cases} a_1x + b_1y = c_1 \\ a_2x + b_2y = c_2 \end{cases}$$

The solution is given by

$$x = \frac{D_x}{D} = \frac{\begin{vmatrix} c_1 & b_1 \\ c_2 & b_2 \end{vmatrix}}{\begin{vmatrix} a_1 & b_1 \\ a_2 & b_2 \end{vmatrix}}, \quad y = \frac{D_y}{D} = \frac{\begin{vmatrix} a_1 & c_1 \\ a_2 & c_2 \end{vmatrix}}{\begin{vmatrix} a_1 & b_1 \\ a_2 & b_2 \end{vmatrix}}$$

provided that  $D \neq 0$ .

**Graph the system**

$$\begin{cases} y = 2x + 1 \\ y = -x - 2 \end{cases}$$

Y=2 X,T,θ,n + 1 ENTER

Y=(-) X,T,θ,n - 2 ENTER

ZOOM 6

### Smart Study Strategy

#### Make Note Cards

Invest in three different colors of 4 × 6 note cards. Use one color for each of the following: vocabulary words; rules; and calculator keystrokes.

- Write vocabulary words on note cards, one word per card. Write the definition and an example on the other side. If possible, put definitions in your own words.
- Write rules on note cards, one per card. Include an example and an explanation on the other side.
- Write each kind of calculation on a separate note card. Include the keystrokes required to perform the calculation on the other side.

Use the note cards as references while doing your homework. Quiz yourself once a day.