

UNIT 3 DAY 4: PRACTICE YOUR SKILLS

1. Verify whether the given ordered pair is a solution to the system. If it is not a solution, explain why not.

a) $(-15.6, 0.2)$

$$\begin{cases} y = 47 + 3x \\ y = 0.5x + 8 \end{cases}$$

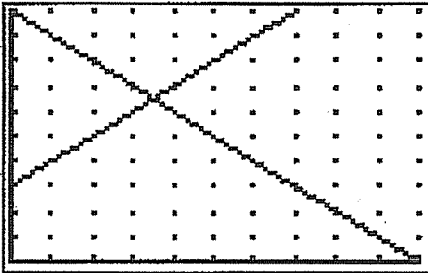
b) $(-4, 23)$

$$\begin{cases} y = -2x + 15 \\ y = 12 + x \end{cases}$$

c) $(2, 12.3)$

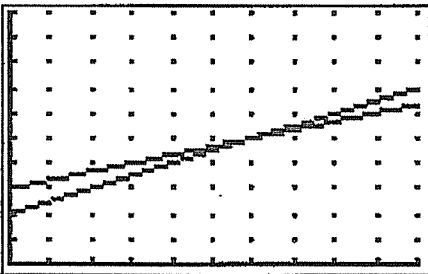
$$\begin{cases} y = 5x + 4.5 \\ y = 5x + 2.3 \end{cases}$$

2. Match the graph of a system of equations with its table of values. Each tick mark on the graph represents one unit.



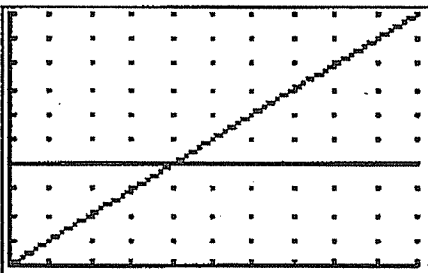
A)

X	Y1	Y2
1	4	1
2	4	2
3	4	3
4	4	4
5	4	5



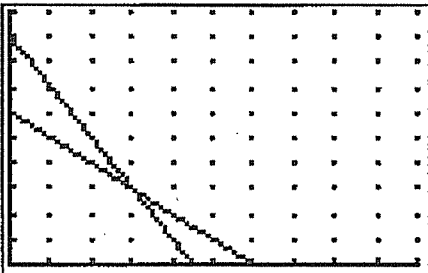
B)

X	Y1	Y2
0	9	6
1	7	5
2	5	4
3	3	3



C)

X	Y1	Y2
4	4	4.33
5	4.5	4.67
6	5	5
7	5.5	5.33



D)

X	Y1	Y2
3	7	6
3.5	6.5	6.5
4	6	7
4.5	5.5	7.5

3. Graph each system on your calculator using the window given. Use the trace function to find the point of intersection. Is the calculator giving you approximate or exact solutions?

You will change Xmin, Xmax, Scale, Ymin, Ymax, Scale – You will not change the “dot” setting.

a) [-18.8, 18.8, 5, -12.4, 12.4, 5]

$$\begin{cases} y = 0.5x + 3 \\ y = -9 + 2x \end{cases}$$

b) [-4.7, 4.7, 1, -3.1, 3.1, 1]

$$\begin{cases} y = 4x - 5.5 \\ y = -3x + 5 \end{cases}$$

4. Use the calculator table function to find the solution to each system of equations. (In 4b, you'll need to solve the equations for y first.)

a)
$$\begin{cases} y = 7 + 2.5x \\ y = -6x + 35.9 \end{cases}$$

b)
$$\begin{cases} 2x + y = 9 \\ 3x + y = 16.3 \end{cases}$$

5. Two friends start rival internet companies in their homes. It costs Gizmo.kom \$12,000 to set up the computers and necessary office supplies. Advertisers pay Gizmo.kom \$2.50 for each hit (every visit to the website).

a) Write an equation that describes the profits for Gizmo.kom.

b) The profit for the rival company Widget.com is $P = -5000 + 1.6N$. Explain possible real world meanings of the numbers and variables in this equation and tell why they're different from those in 5a.

c) Use a calculator table to find the N -value that gives approximately equal P -values for both equations.

d) Use your answer to 5c to select a viewing window, and graph both equations to display their intersection and all x and y intercepts.

e) What are the coordinates of the intersection point of the two graphs? Explain how you found this point and how accurate you think it is.

f) What is the real-world meaning of these coordinates?

The total tuition for students at University College and State College consists of student fees plus cost per credit. Some classes have different credit values. The table shows the total tuition for programs with different numbers of credits at each college.

1. Write a system of equations for each college.

Total Tuition		
Credits	University College (\$)	State College (\$)
1	55	47
3	115	111
6	205	207
9	295	303
10	325	335
12	385	399

2. Find the solution to this system.

3. Which method did you use? Why?

4. What is the real world meaning of the solution?

5. When is it cheaper to attend University College? When is it cheaper to attend State College?

(Use #s to explain!)