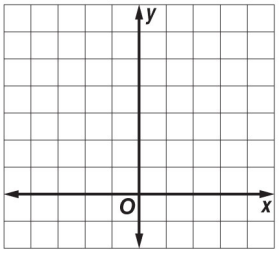
Unit 6 Learning Goals Check List:

section	Learning Goal	✓

6.1 a) I can solve and classify systems of equations in two variables using a graph.

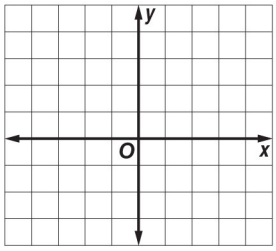
Ex. Graph each system of equations and identify the solution from the graph. Classify as consistent or inconsistent, and independent or dependent.

1. $2x + y = 6$
$2x - y = -2$



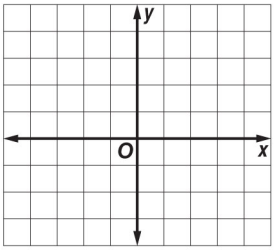
Solution:
Classification:

2. $3x + 2y = 6$
$3x + 2y = -4$



solution:
classification:

3. $2y = -4x + 4$
$y = -2x + 2$



solution:
classification:

Ex. BUSINESS Nick plans to start a home-based business producing and selling gourmet dog treats. He figures it will cost $20 in operating costs per week plus $0.50 to produce each treat. He plans to sell each treat for $1.50.

a. Write & graph a system of equations to model Nick's business. (One equation for cost and one equation for profits.)

b. How many treats does Nick need to sell per week to break even?

b) I can find the solution to a system of equations using a table.

Ex. Identify the solution to the system of equations from the given table.

x	Y_1	Y_2

Solution:

x	Y_1	Y_2

Solution:

Ex. Use the table in your graphing calculator to solve each given system of equations.

1. $x + 3y = 3$
$x + y = -3$

solution:

2. $x + 2y = 3$
$3x - y = -5$

solution:

6.2 a) I can solve systems of equations using substitution.

Ex. solve each system algebraically using substitution. Be sure to check your solution!

1. $y = 6x$
$2x + 3y = -20$

2. $x = 2y + 7$
$x = y + 4$

3. $x + 2y = 13$
$-2x - 3y = -18$

Ex. **EMPLOYMENT** Kenisha sells athletic shoes part-time at a department store. She can earn either $500 per month plus a 4% commission on her total sales, or $400 per month plus a 5% commission on total sales.

a. Write a system of equations to represent the situation.

b. What is the total price of the athletic shoes Kenisha needs to sell to earn the same income from each pay scale?

c. Which is the **better** offer and **why**?

6.3 I can solve systems of equations using addition and subtraction.

Ex. $2x + 4y = 10$
$x - 4y = -2.5$

Ex. $2x - 6y = 6$
$2x + 3y = 24$

check:

Ex. The sum of two numbers is 41 and their difference is 5. Find the two numbers.

Ex. One number added to three times another number is 24. Five times the first number added to three times the other number is 36. Find the numbers.

6.4 I can algebraically solve a system of equations using multiplication.

Ex. $2x + 9y = 3$
$5x + 4y = 26$

ex. $-9x + 3y = -3$
$3x - 2y = -4$

Check:

Ex. Joe bought 24 baseball cards for $50. One type cost $1 per card & the other cost $3. Define your variables, then write and solve a system of equations to determine how many of each type Joe purchased.

Ex. A non-stop 1,000 mile plane trip from Austin to Denver (flying into the wind) takes 2 hours. The return trip (flying with the wind) only takes 1.4 hours. Write and solve a system of equations to determine how fast the plane travels without wind interference.

6.5 I can write & solve systems of equations using any method in real world problems.

Ex. A roadside vegetable stand sells pumpkins for $5 each and squashes for $3 each. One day they sold 6 more squash than pumpkins, and their sales totaled $98. Write and solve a system of equations to find how many pumpkins and quash they sold?

Ex. Anya makes 14 baskets during her game. Some of these baskets were worth 2-points and others were worth 3-points. In total, she scored 30 points. Write and solve a system of equations to find how 2-points baskets she made.