

\*AAT

Chapter 9: Systems of Linear Equations (IC)

Name: Key  
Date: \_\_\_\_\_ Period: \_\_\_\_\_

Solve each system of equations using either substitution, elimination or graphing.

1.  $2x + y = 10$

$y = 3x - 5$

Substitution

$2x + (3x - 5) = 10$

$2x + 3x = 15$

$5x = 15$

$x = 3$

$(3, 4)$

$y = 3(3) - 5$

$y = 9 - 5$

$y = 4$

2.  $x + y = 3$

$-2x + y = 3$

Elimination

$-x = 0$

$x = 0$

$0 + y = 3$

$y = 3$

$(0, 3)$

3.  $2x + 3y = 47$

$-x + 3y = 40$

Elimination

$x = 7$

$7 + 3y = 40$

$3y = 33$

$y = 11$

$(7, 11)$

4. An online CD subscription service offers a one year subscription with an introductory offer of 12 CDs for 1 cent. CDs purchased after the introductory offer are \$15.98 plus \$2.00 shipping and handling for each CD. The music store in the mall offers all regular CDs for \$13.95.

a. Write equations modeling the cost of buying CDs from the subscription service and the music store in the mall.

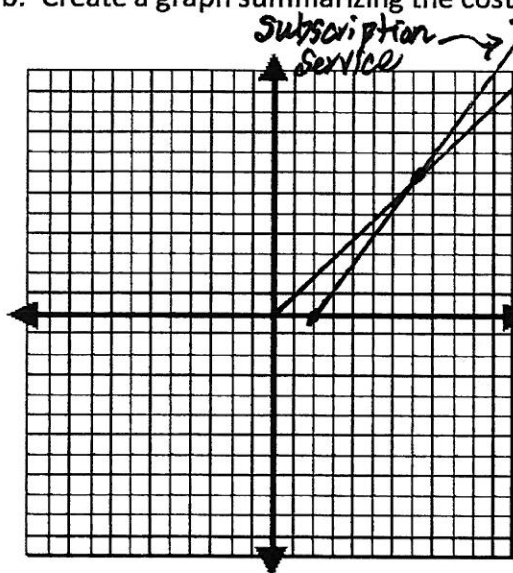
Subscription Service:  $C = .01 + 17.98(x - 12)$

Music Store:  $C = 13.95x$

$x = \#$  of C.D.'s purchased

$C =$  cost of buying CD's

b. Create a graph summarizing the cost of buying CDs.



$$.01 + 17.98(x - 12) = 13.95x$$

$$(53.5, 746.83) \quad .01 + 17.98x - 215.76 = 13.95x$$

$$-215.75 = -4.03x$$

$$x \approx 53.34$$

c. Will the cost of buying CDs ever be the same? If so, determine the number of CDs you can buy and the cost.

If I buy between 53 & 54 c.d.'s, the cost will be approximately \$ 746.83 from both subscription & store.

d. Based on your findings, would you buy your CDs from the subscription service or the music store? Explain.

(sample) If I buy less than 53 cd's I would choose subscription service. I usually buy very few cd's so I would go with subscription service