Name : _____ Block: _____

Unit 5 Checkpoint #1 (5.1 – 5.4)

1. Identify the variables and create a linear system to model the situation.

   a) The total mass of vitamin C in one apple and two peaches is 17 mg. The total mass of vitamin C in two apples and one peach is 13 mg.

   b) Sea otters live along the coasts of California and Northern BC. The total number of sea otters is 130 000. There are twenty-five times more sea otters in Northern BC than in California.
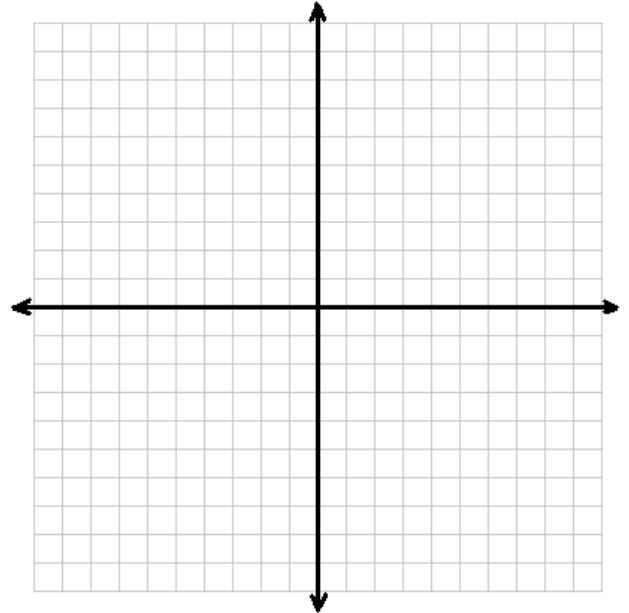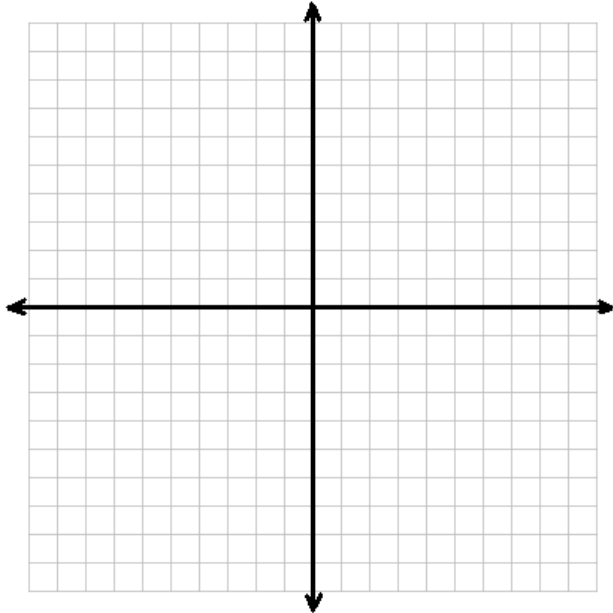
   c) The cost for theatre tickets is $20 for adults and $12 for students. $9184 was collected at the box office. 550 people attended the show.

2. Verify that $(2, -1)$ is a solution to the linear system.
   $$2x + y = 3$$
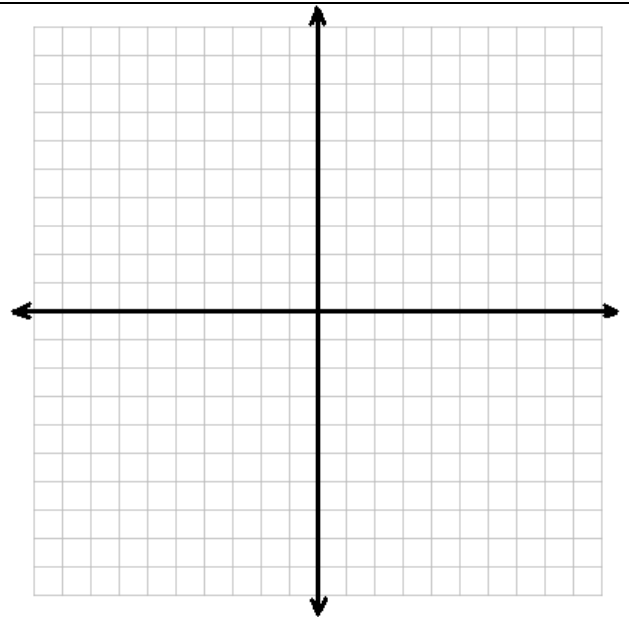 $$4x + 3y = 5$$

3. Solve the linear systems by graphing.

a) $2x - y = 1$ $x + y = 5$	b) $x - 2y + 2 = 0$ $x - y + 1 = 0$
c) $2x - 3y = 0$ $4x + 3y = 18$	d) $y = \frac{1}{3}x + 1$ $x - y = 3$
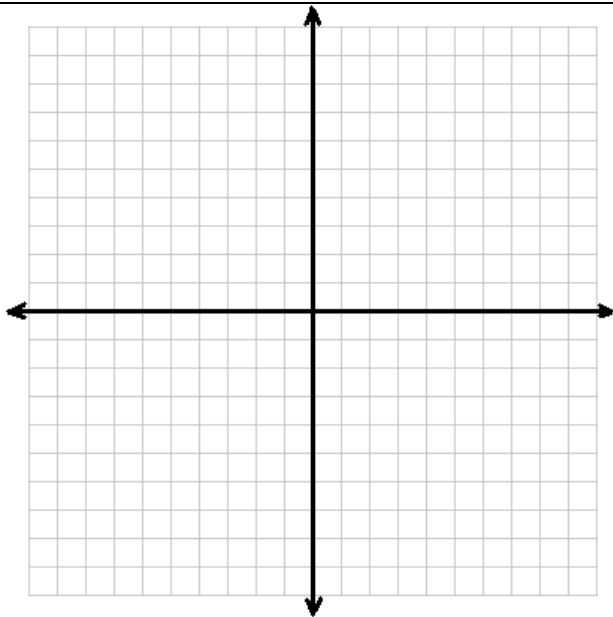
4. Solve the system of equations using the <u>substitution</u> method.

   a) $x + 4y = 6$
   $2x - 3y = 1$

   b) $x - y = 1$
   $3x + y = 11$

   c) $3x + 4y = 15$
   $x + y = 5$

Use <u>elimination</u> method to answer the following word problems.

5. Cindy purchased sleeves and boxes of golf balls. Each sleeve contained 3 golf balls and each box contained 12 golf balls. Cindy purchased 7 packages for a total of 48 golf balls. How sleeves and how many boxes did she buy?

6. Tickets are sold for Safari Day at the zoo. Ben buys 5 admission tickets and 3 train ticket, he pays $65. Barb buys 2 admission tickets and 1 train ticket, she pays $25. What is the price of each ticket?