

# System of Linear Equations

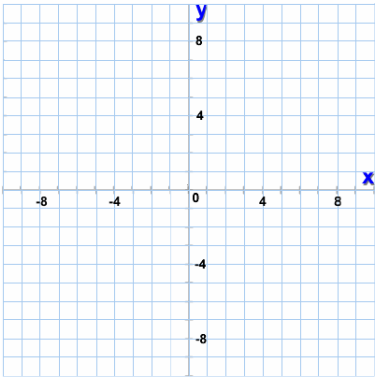
## Solve by Graphing

1) A total of \$14,000 is invested in two funds paying 4% and 5% annual interest. The combined interest is \$620.

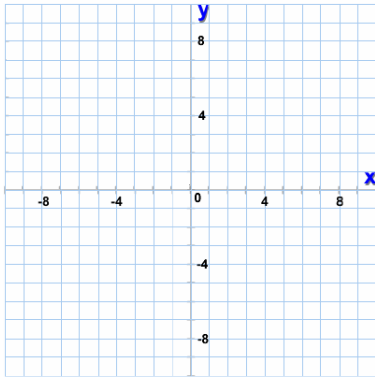
- a. Write a system of equations to model this problem?
  
  
- b. Graph this system and use the graph to estimate how much was invested in each fund?

2) Graph the following linear systems and give their solution:

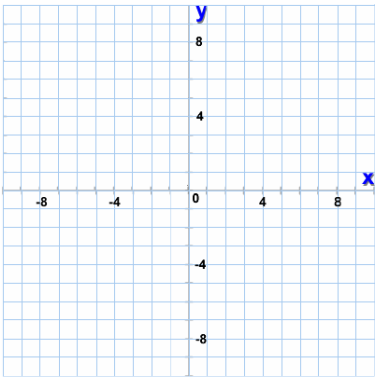
a)  $x - y = 3$     Answer: \_\_\_\_\_  
 $x + y = 1$



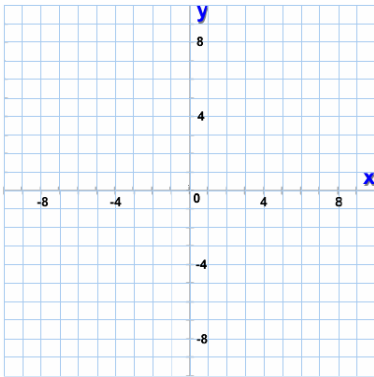
b)  $x + y = -2$     Answer: \_\_\_\_\_  
 $-x + 2y = -7$



c)  $x + 2y = 7$     Answer: \_\_\_\_\_  
 $x + 2y = 5$



b)  $2y = -6$     Answer: \_\_\_\_\_  
 $-x + y = 1$



3) What is the solution for a linear system if the two lines are parallel? Explain?

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**Solve by Substitution**

4) Solve the following systems of linear equations by using the substitution method:

a)  $x - 2y = 10$

$-4x - 3y = 37$

Answer: \_\_\_\_\_

b)  $-4x + y = 10$

$3x + 3y = 15$

Answer: \_\_\_\_\_

c)  $x + 3y = 4$

$-3x - 9y = -12$

Answer: \_\_\_\_\_

d)  $-3x - 3y = 18$

$-x + 3y = 2$

Answer: \_\_\_\_\_

5) What does it mean when solving linear system by substitution if you get a result of a constant equals a constant? What is the answer of such a system?

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**Solve by Linear Combination**

6) Solve the following systems of linear equations by using linear combination:

a)  $-3x + 4y = 26$

$4x + 2y = -20$

Answer: \_\_\_\_\_

b)  $3x - 3y = -36$

$2x + 5y = 32$

Answer: \_\_\_\_\_

c)  $x + 2y = 7$

$-x + 2y = 5$

Answer: \_\_\_\_\_

d)  $-2x + 4y = -18$

$-4x + 5y = 42$

Answer: \_\_\_\_\_

7) In your own words describe which solution method is better in what situation. Include examples explaining your reasoning.

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