

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

## Worksheet 3.7K: Writing Systems of Equations | Chapter 3

Remember, we can write our own systems of equations by asking the following questions:

1. What information does the problem give us?
2. What two pieces are unknown? **These become our variables.**
3. How can I organize the information into two equations? **This becomes our system.**

**For each problem, write a system of equations.** Make sure that you state and label what the variables are for each problem. *Extra credit is awarded to students who correctly solve the problems.*

1. Alfred has 9 pencils and pens. He has twice as many pencils than pens. *How many does he have of each?*
2. Tania has 3 more dollars than her friend Cindy. Together they have 7 dollars. *How much money does each girl have?*
3. The perimeter of a rectangle is 8 inches. The length of the rectangle is one inch more than twice the width of the rectangle. *Find the dimensions for the rectangle.*
4. The perimeter of an isosceles triangle is 7 meters. The length of one of the congruent sides of the triangle is one meter less than the side that is not congruent. *Find the length of the sides of the triangle.*
5. From a car wash a service club made \$108 that will be divided between the Boy Scouts and the Girl Scouts. There were twice as many girls as boys so a decision was made to give the girls twice as much money. *How much did each group receive?*

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6. The length of a rectangle is three times the width. The perimeter is 240 centimeters. *Find the length and width of the rectangle.*
  
  
  
  
  
  
  
  
  
  
7. Jenny earns \$2 for each pair of shoes she sells and \$3 for each pair of boots she sells. Her total earnings was \$61. If she sold 3 more pair of shoes than boots, *how many pairs of boots did she sell?*
  
  
  
  
  
  
  
  
  
  
8. Angle A and angle B are complementary angles. If angle A is  $30^\circ$  less than twice angle B, *then find the degree measure for each angle.* (Complementary means that the angles add to  $90^\circ$ .)
  
  
  
  
  
  
  
  
  
  
9. Mary owns 25 DVD's. The number of comedy DVDs is 5 less than twice the number of drama DVDs. Write a system of equations describing Mary's total number of comedy DVDs,  $x$ , and drama DVDs,  $y$ . *How many of each type did Mary have?*
  
  
  
  
  
  
  
  
  
  
10. The band is selling T-shirts to raise funds for their annual trip. They have two companies to choose from. A.B. shirts will charge them \$7.50 per shirt, plus a setup fee of \$22.50 for the design. Unique Tops will charge \$8.25 per shirt with no setup fee. *Which T-shirt company is giving the band a better deal? Explain your answer.*