













## Solving Systems




### Activity #1: Shapes and Mystery Values

**Part 1 (Complete in Class)**

Find the value of each shape so that they will add up to give you the specified sums in each row and each column.

1.

			Row sum = 46
			Row sum = 27
			Row sum = 32
			Row sum = 37
Column sum = 55	Column sum = 46	Column sum = 41	

 = \_\_\_\_\_    
  = \_\_\_\_\_    
  = \_\_\_\_\_

Which shape did you choose to figure out first, and why?













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



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Show work (drawings are ok) on how you figured out the values of all the shapes.













2.




			Row sum = 46
			Row sum = 18
			Row sum = 40
			Row sum = 54
Column sum = 60	Column sum = 52	Column sum = 46	


 = \_\_\_\_\_     = \_\_\_\_\_     = \_\_\_\_\_

Show work (drawings are ok) on how you figured out the values of all the shapes.

3.

			Row sum = 38
			Row sum = 50
			Row sum = 48
			Row sum = 43
Column sum = 53	Column sum = 63	Column sum = 63	

 = \_\_\_\_\_    
  = \_\_\_\_\_    
  = \_\_\_\_\_

James thinks that  has a value of 10. Explain to him why that is impossible by comparing the sums from the **top row** and the **leftmost column**.

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



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Show work (drawings are ok) on how you figured out the values of all the shapes.













4.




			Row sum = 56
			Row sum = 47
			Row sum = 55
			Row sum = 64
Column sum = 72	Column sum = 71	Column sum = 79	

 = \_\_\_\_\_     = \_\_\_\_\_     = \_\_\_\_\_


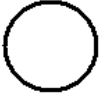
Show work (drawings are ok) on how you figured out the values of all the shapes.

5.

			Row sum = 42
			Row sum = 18
			Row sum = 27
			Row sum = 30
Column sum = 50	Column sum = 32	Column sum = 35	

 = \_\_\_\_\_  
  = \_\_\_\_\_  
  = \_\_\_\_\_

By looking at the **leftmost column**, what conclusion can you draw about the sum of

 and  ? How does that help you figure out the rest of the puzzle?

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










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
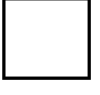


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Show work (drawings are ok) on how you figured out the values of all the shapes.

6.

			Row sum = 78
			Row sum = 65
			Row sum = 68
			Row sum = 71
Column sum = 109	Column sum = 80	Column sum = 93	




 = \_\_\_\_\_     = \_\_\_\_\_     = \_\_\_\_\_

Show work (drawings are ok) on how you figured out the values of all the shapes.

## Part 2

### Drawing your own shapes

For each of the following *systems of equations*, draw out the equations using shapes

 ,  ,  to help you find their values! (The first one is started for you.)

1. Equations:

$$2x + z = 46$$

$$3z = 18$$

$$2y + z = 40$$

$$x = \underline{\quad}$$

$$y = \underline{\quad}$$

$$z = \underline{\quad}$$

Drawing:

$$\square \square \triangle = 46$$

$$\triangle \triangle \triangle = 18$$

$$\circ \circ \triangle = 40$$

2. Equations:

$$x + 2y = 46$$

$$y + 3z = 41$$

$$3z = 27$$

$$x = \underline{\quad}$$

$$y = \underline{\quad}$$

$$z = \underline{\quad}$$

Drawing:

3. Equations:

$$2x + 2y = 50$$

$$2x + y = 42$$

$$y + 2z = 18$$

$$x = \underline{\quad}$$

$$y = \underline{\quad}$$

$$z = \underline{\quad}$$

Drawing:

4. Equations:

$$3y + 3z = 54$$

$$x + y + z = 24$$

$$3y + x = 15$$

$$x = \underline{\quad}$$

$$y = \underline{\quad}$$

$$z = \underline{\quad}$$

Drawing:

5. Would the value  $x = 8$  make the following equations true *simultaneously*? Explain why or why not.

$$x + 2y + 3z = 100$$

$$2y + 3z = 90$$

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6. Would the value  $z = -9$  make the following equations true *simultaneously*? Explain why or why not.

$$x + y + z = 1$$

$$x + y = 10$$

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7. Is  $y = 3$  a possible solution to the following *system of equations*? Explain why or why not.

$$x + 2y + z = 28$$

$$3x + 3z = 60$$

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8. After 3 weeks of saving up your allowances, you and your sister have \$90 altogether. The next week, you two were able to save \$55 because your grandma gave you two some extra cash on top of the regular allowance. How much did grandma give you? Show work.