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- I. Model Problems.
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- IV. Practice Problems with Circles
- V. Mixed Problems

### Web Resources

 <http://www.mathwarehouse.com/df/>

[www.mathwarehouse.com/algebra/distance\\_formula/interactive-distance-formula.php](http://www.mathwarehouse.com/algebra/distance_formula/interactive-distance-formula.php)

Pictures of the distance formula:

[www.mathwarehouse.com/algebra/distance\\_formula/images/](http://www.mathwarehouse.com/algebra/distance_formula/images/)

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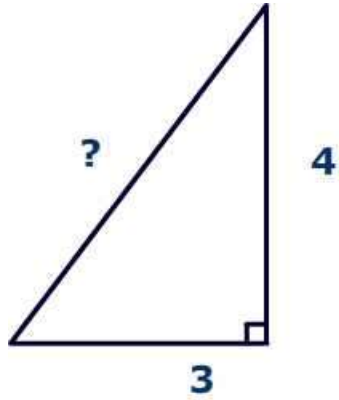
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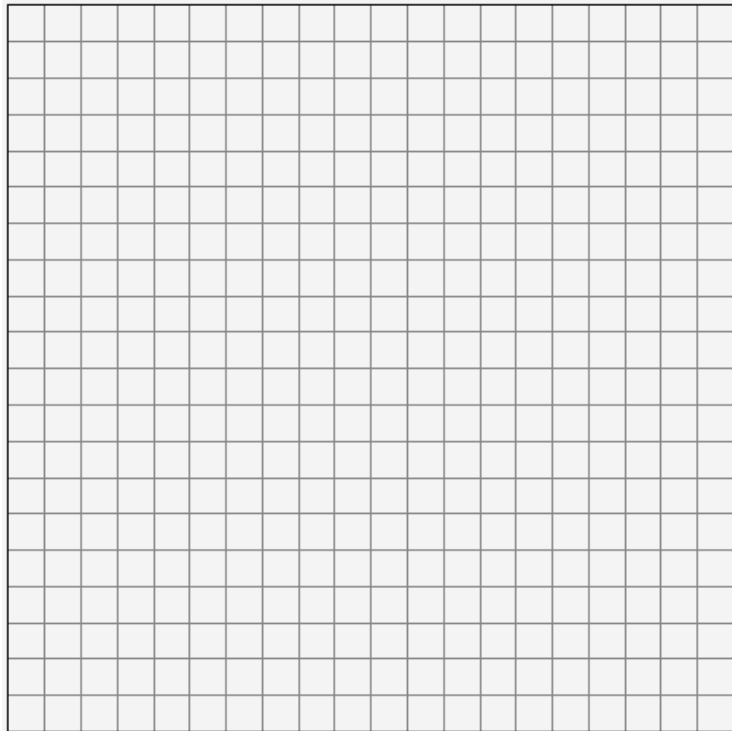
**Warm Up →**

What is the value of  $c$ ?



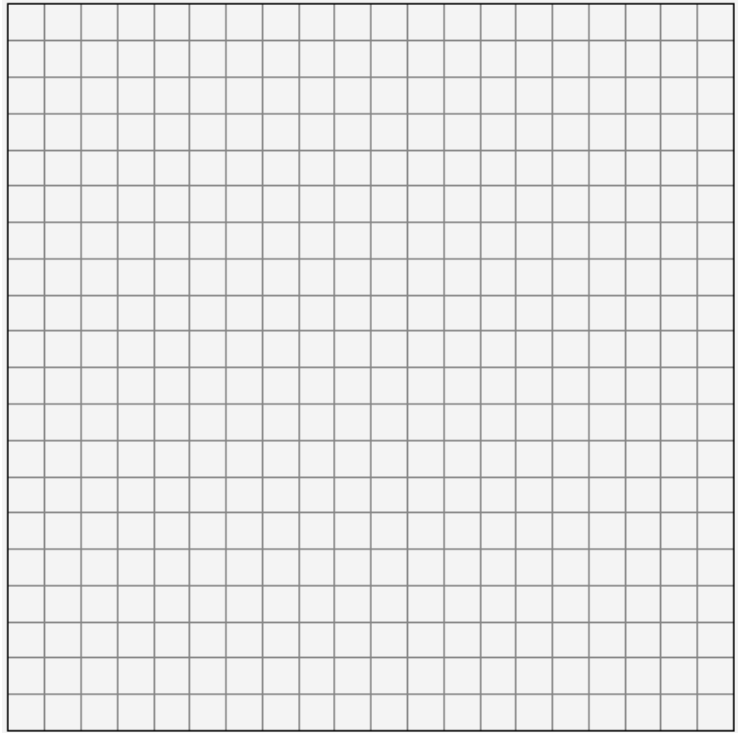
**Model Problem 1**

Find the length of AC given  $A(2, 3)$  and  $C(5, 7)$ .



### Model Problem 2

Find the length of AB given A(3, -4) and B(-2, 3).



### I. Practice Problems

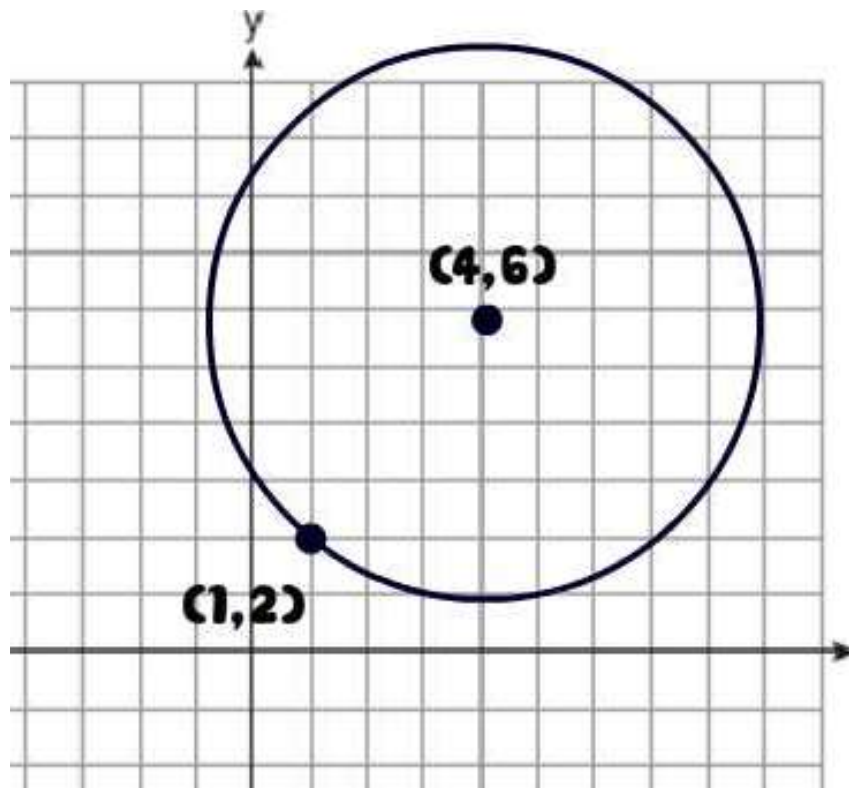
1) Find the distance between the points ( 1 , 3 ) and (6, 15).

2) Find the distance between the points (-4,-5) and (1,-2).

3) What is the distance between points A(-6,3) and B(6,8)?

**Think pair share**

How can you use the distance formula to solve problems like the following one:  
The point (1,2) lies on a circle. What is the length of the radius of this circle if the center is located at (4,6)?



**Part II.**

1) The point  $(5,4)$  lies on a circle. What is the length of the radius of this circle if the center is located at  $(3,2)$ ?

2) The point  $(-2,-1)$  lies on a circle. What is the length of the radius of this circle if the center is located at  $(0,4)$ ?

3) The point  $(4,5)$  lies on a circle. What is the **diameter** of this circle if the center is located at  $(7,9)$ ?

### III. Mixed Problems

- 1) What is the distance between points C(-2,3) and D(0,5)?
  
- 2) What is the distance between points A(-4,5) and B(-2,5)?
  
- 3) The point ( 1 ,2 ) lies on a circle. What is the **diameter** of this circle if the center is located at ( 7, 10 )?

