



Rotate each shape. Answer as the new coordinates.

Answers

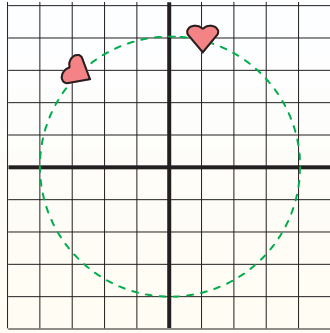
θ = Angle of Rotation

Rotation Formula

$$x_1 = x \times \cos(\theta) - y \times \sin(\theta)$$

$$y_1 = x \times \sin(\theta) + y \times \cos(\theta)$$

In the example to the right the shape is at coordinates (1,4). Lets find the coordinates if we rotated the shape 60°.



1. $x_1 = 1 \times \cos(60) - 4 \times \sin(60)$
 $y_1 = 1 \times \sin(60) + 4 \times \cos(60)$

2. $x_1 = 1 \times 0.5 - 4 \times 0.87$
 $y_1 = 1 \times 0.87 + 4 \times 0.5$

3. $x_1 = 0.5 - 3.48$
 $y_1 = 0.87 + 2$

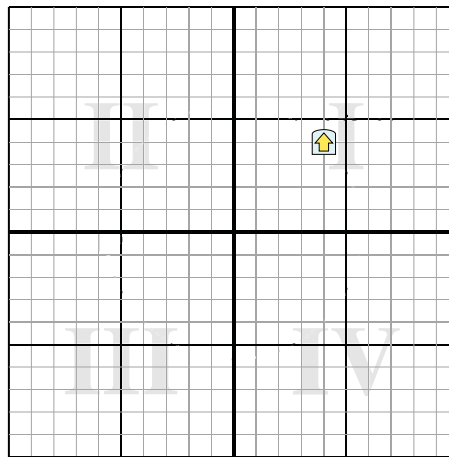
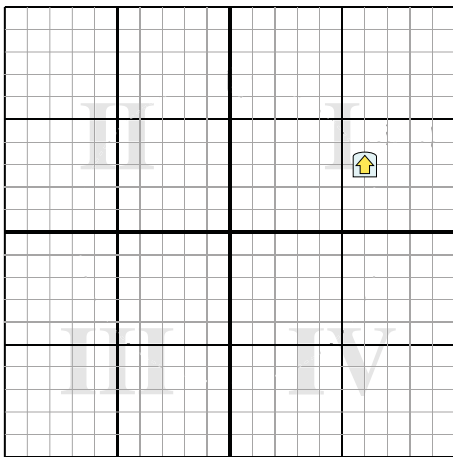
4. $x_1 = -2.98$
 $y_1 = 2.87$

5. Looking at shape, we can see that rotated 60° it is at (-2.98 , 2.87).

- 1. _____
- 2. _____
- 3. _____
- 4. _____

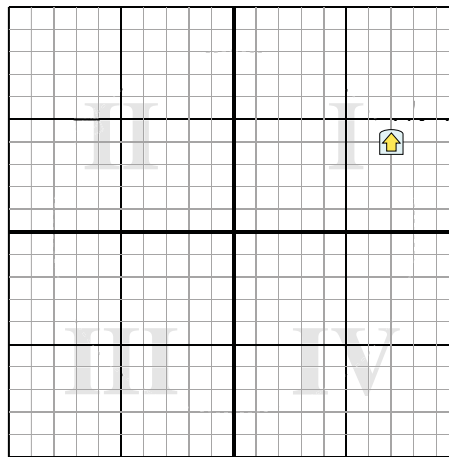
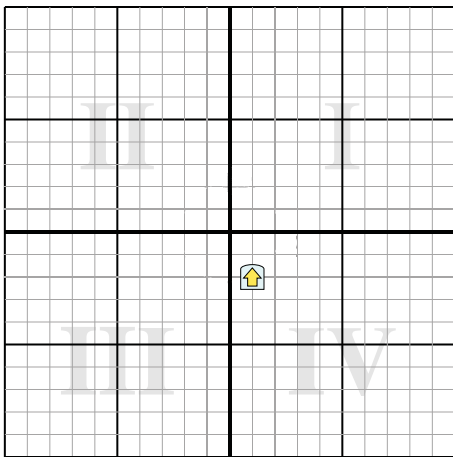
1) Rotate the shape -299° around the point (0,0).

2) Rotate the shape -221° around the point (0,0).



3) Rotate the shape -214° around the point (0,0).

4) Rotate the shape -246° around the point (0,0).





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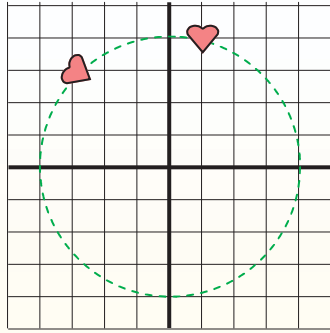
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Answers

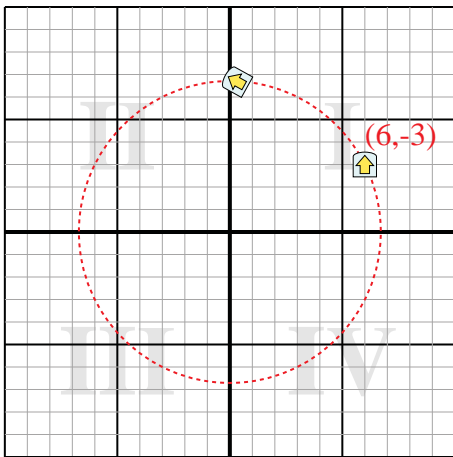
1. (0.3,6.7)

2. (-5.6,-0.4)

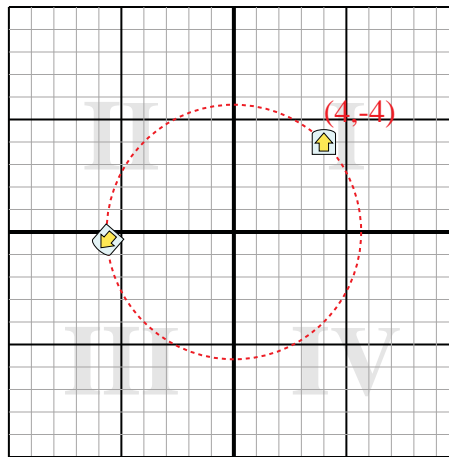
3. (0.3,2.2)

4. (-6.5,4.8)

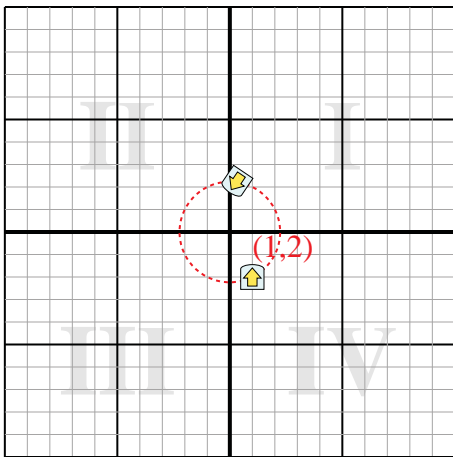
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3) Rotate the shape -214° around the point (0,0).



4) Rotate the shape -246° around the point (0,0).

