Rotating Around Axis

Name:

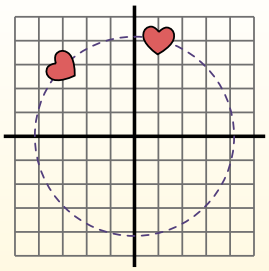
Rotate each shape. Answer with the new coordinates.

θ = Angle of Rotation

Rotation Formula

x1 = x×cos(θ) - y×sin(θ)
y1 = x×sin(θ) + y×cos(θ)

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



1. x1 = 1×cos(60) - 4×sin(60)
y1 = 1×sin(60) + 4×cos(60)

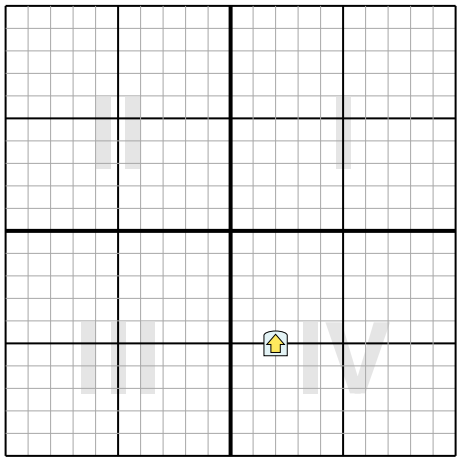
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

3. x1 = 0.5 - 3.48
y1 = 0.87 + 2

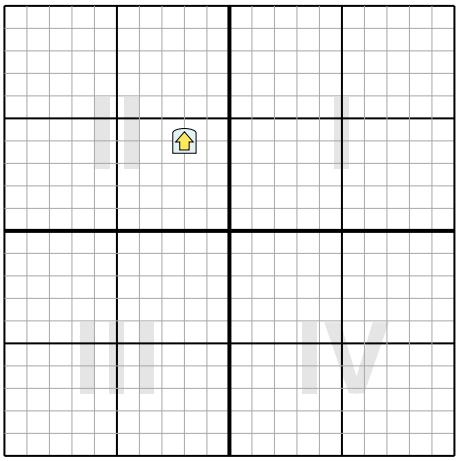
4. x1 = -2.98
y1 = 2.87

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

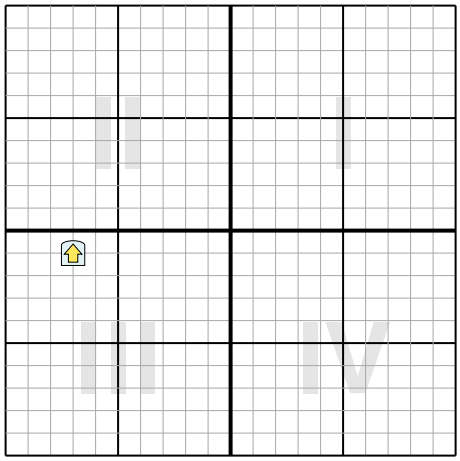
1) Rotate the shape -73° around the point (0,0).



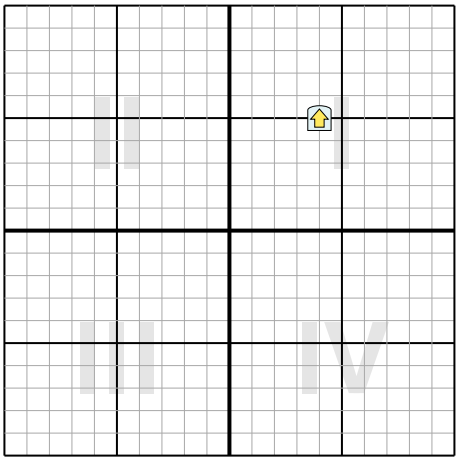
2) Rotate the shape 221° around the point (0,0).



3) Rotate the shape 156° around the point (0,0).



4) Rotate the shape 300° around the point (0,0).



Answers

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

Rotating Around Axis Name: **Answer Key**

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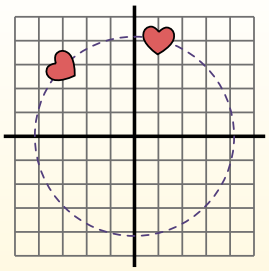

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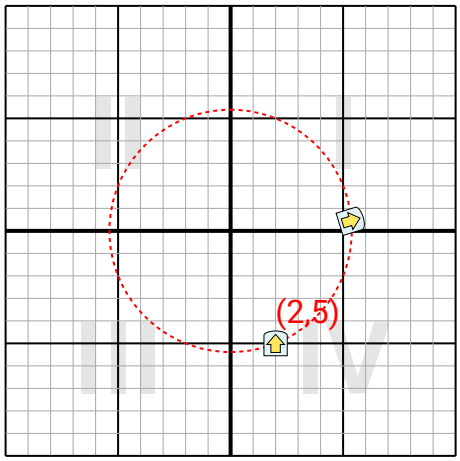

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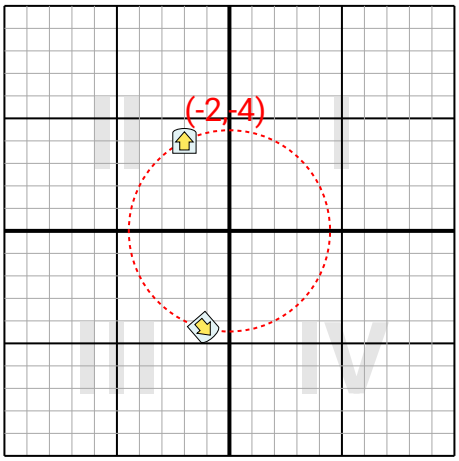

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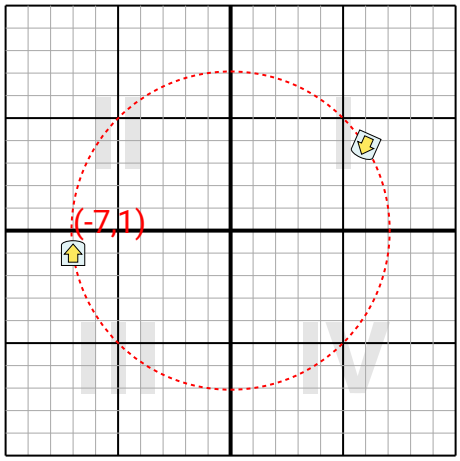

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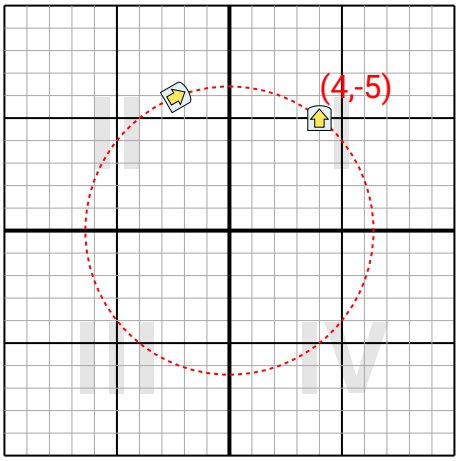

Answers

1. (5.4,0.5)
2. (-1.1,-4.3)
3. (6,3.8)
4. (-2.3,6)