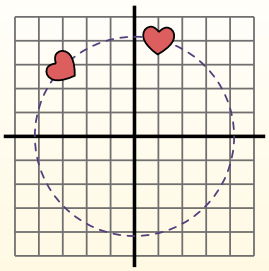
Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

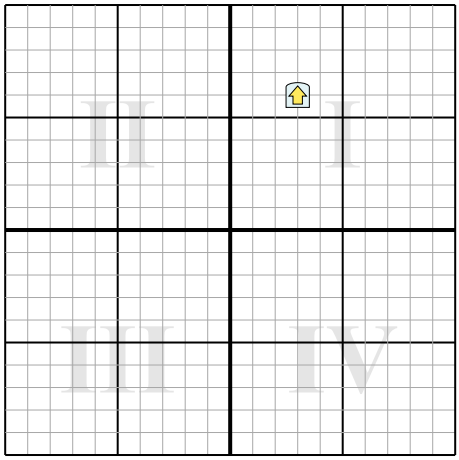
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

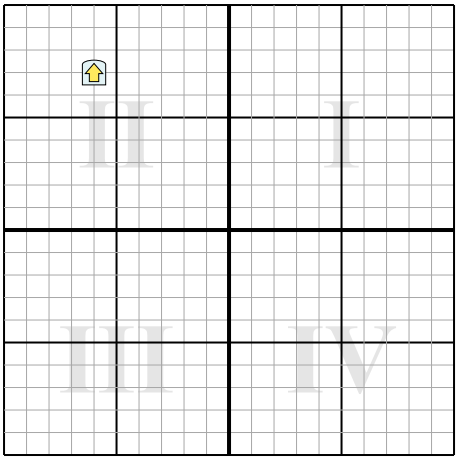
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

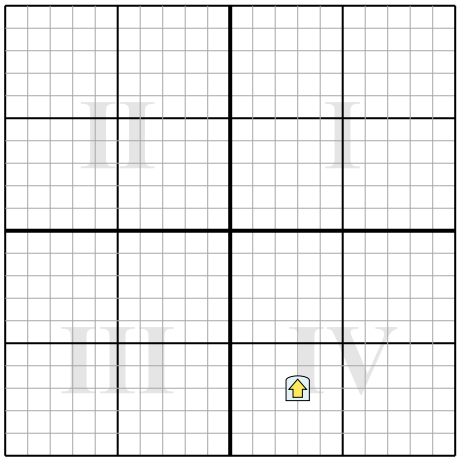
1) Поверните фигуру 231° вокруг точки (0;0).



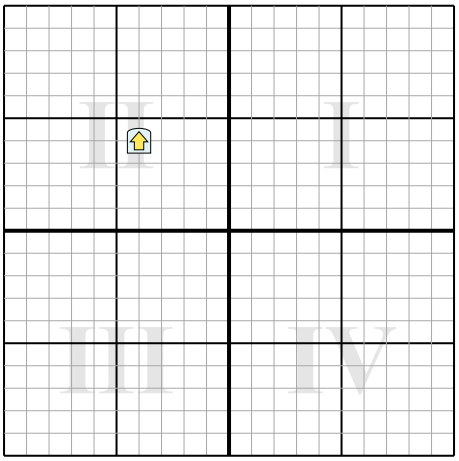
2) Поверните фигуру -205° вокруг точки (0;0).



3) Поверните фигуру -134° вокруг точки (0;0).



4) Поверните фигуру -224° вокруг точки (0;0).



Ответы

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

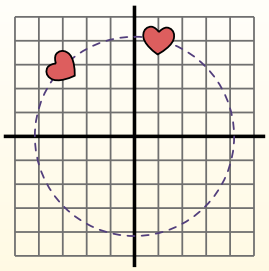
1-4	75	50	25	0

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

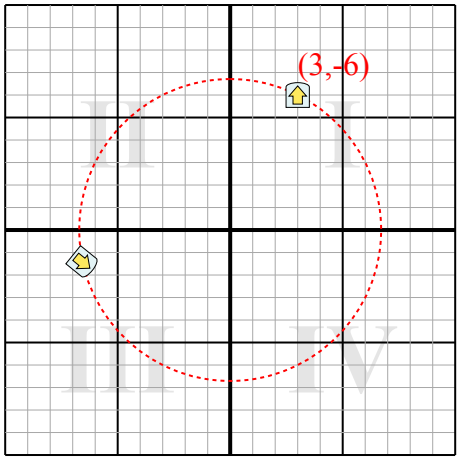
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

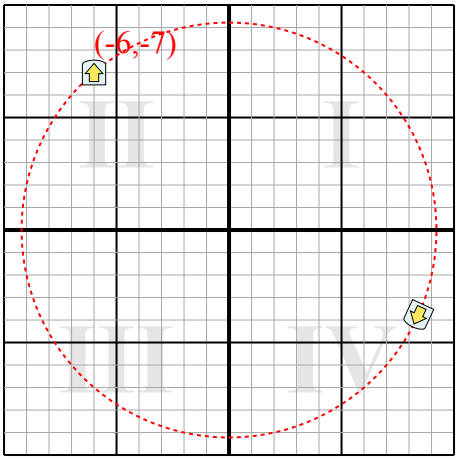
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

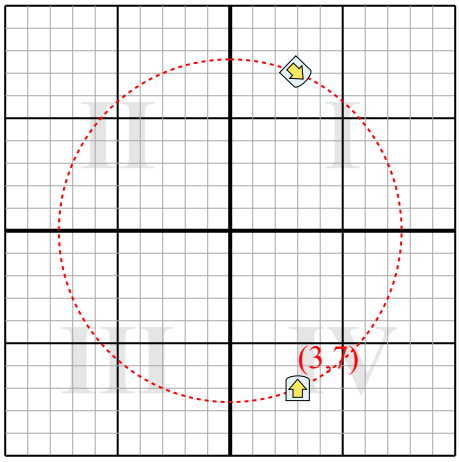
1) Поверните фигуру 231° вокруг точки (0;0).



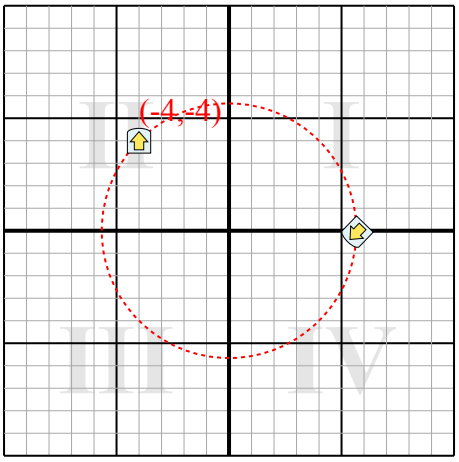
2) Поверните фигуру -205° вокруг точки (0;0).



3) Поверните фигуру -134° вокруг точки (0;0).



4) Поверните фигуру -224° вокруг точки (0;0).



Ответы

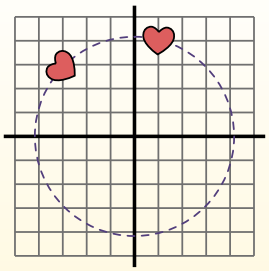
1. (-6,6,-1,4)
2. (8,4,-3,8)
3. (3,7)
4. (5,7,-0,1)

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

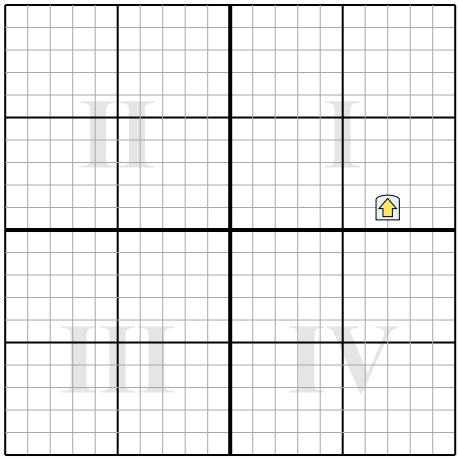
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

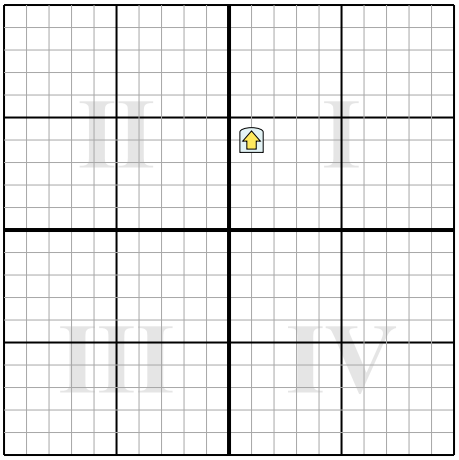
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

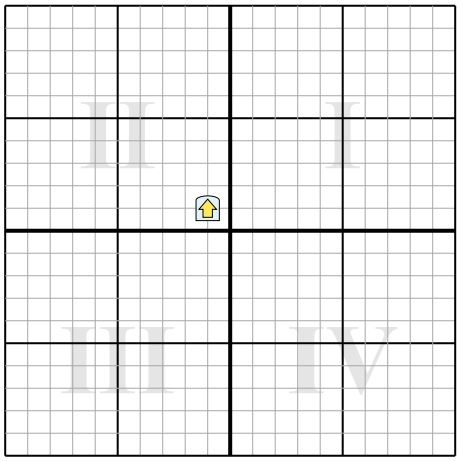
1) Поверните фигуру 76° вокруг точки (0;0).



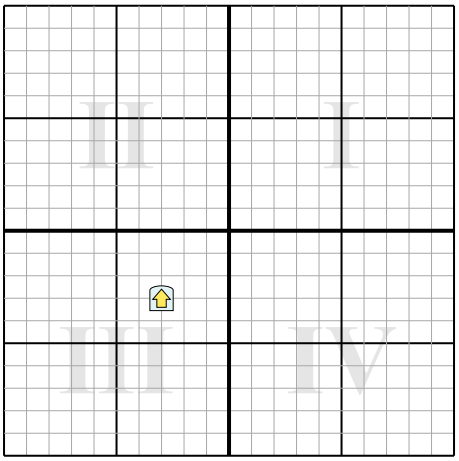
2) Поверните фигуру 192° вокруг точки (0;0).



3) Поверните фигуру 290° вокруг точки (0;0).



4) Поверните фигуру -62° вокруг точки (0;0).



Ответы

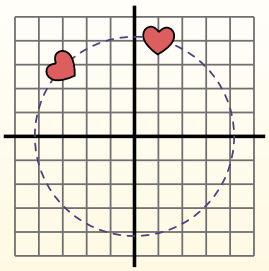
1. _____
2. _____
3. _____
4. _____

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

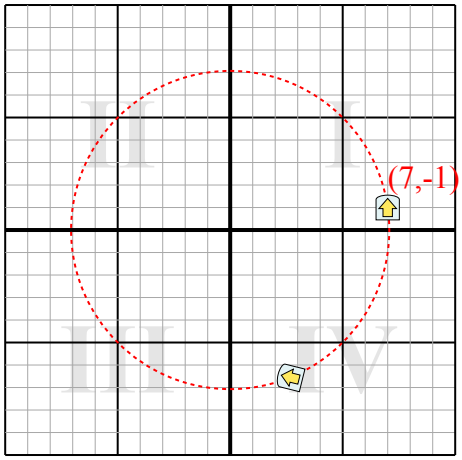
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

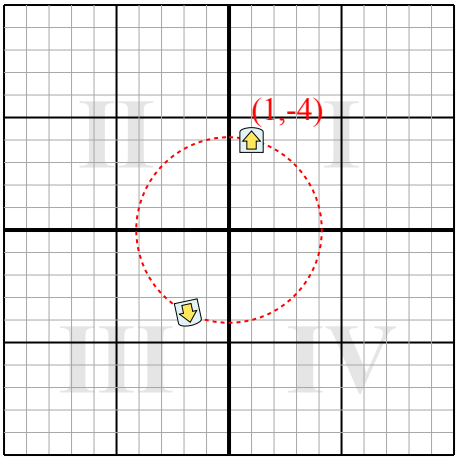
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

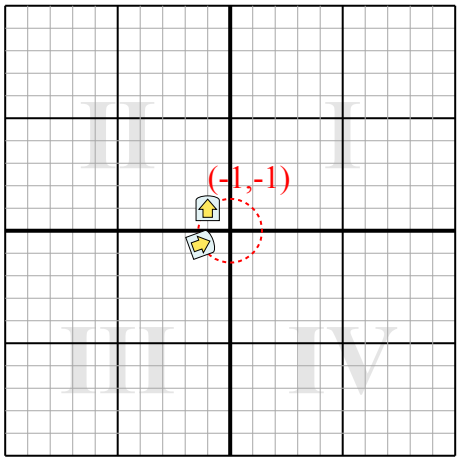
1) Поверните фигуру 76° вокруг точки (0;0).



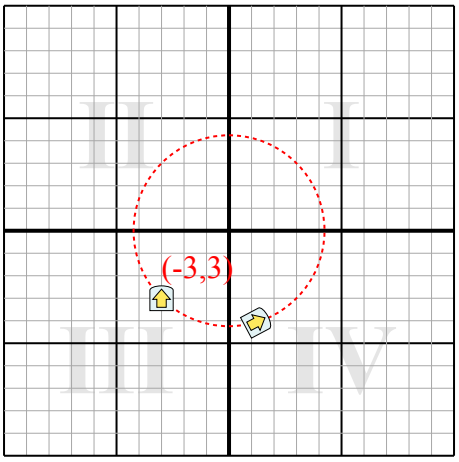
2) Поверните фигуру 192° вокруг точки (0;0).



3) Поверните фигуру 290° вокруг точки (0;0).



4) Поверните фигуру -62° вокруг точки (0;0).



Ответы

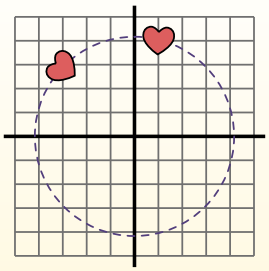
1. **(2,7,-6,6)**
2. **(-1,8,-3,7)**
3. **(-1,3,-0,6)**
4. **(1,2,-4,1)**

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

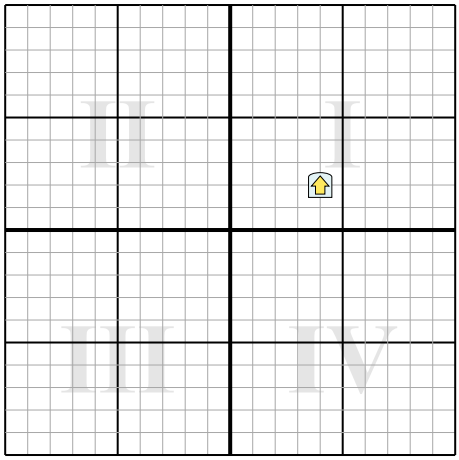
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

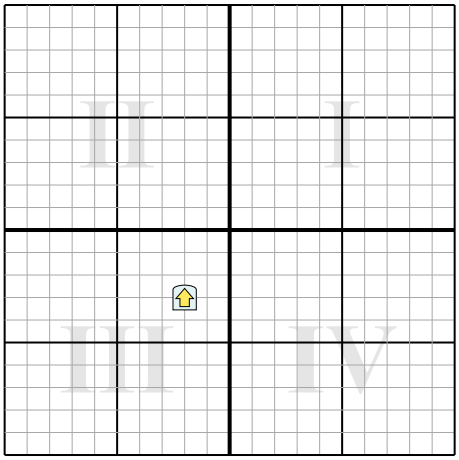
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

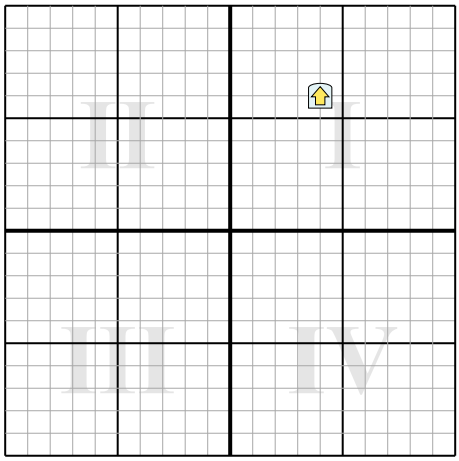
1) Поверните фигуру -230° вокруг точки (0;0).



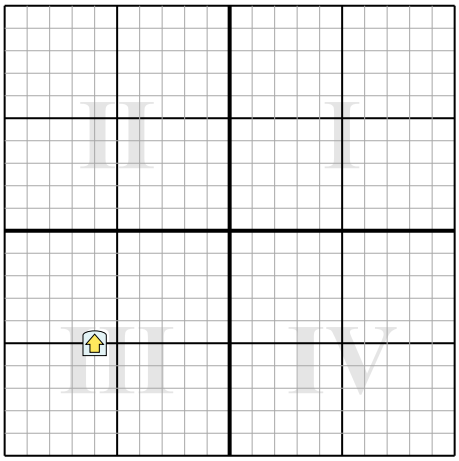
2) Поверните фигуру 149° вокруг точки (0;0).



3) Поверните фигуру -184° вокруг точки (0;0).



4) Поверните фигуру 216° вокруг точки (0;0).



Ответы

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

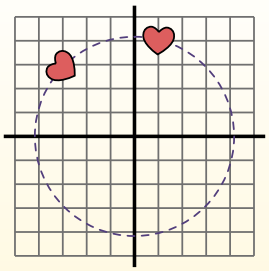
1-4	75	50	25	0

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

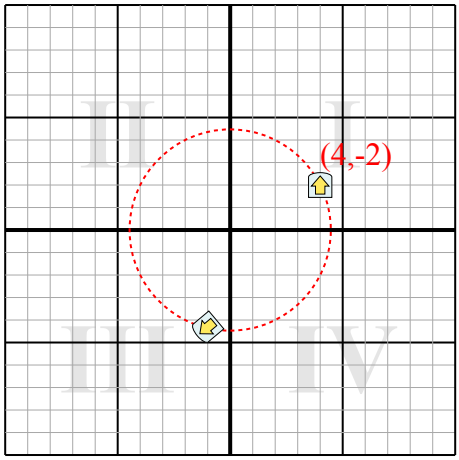
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

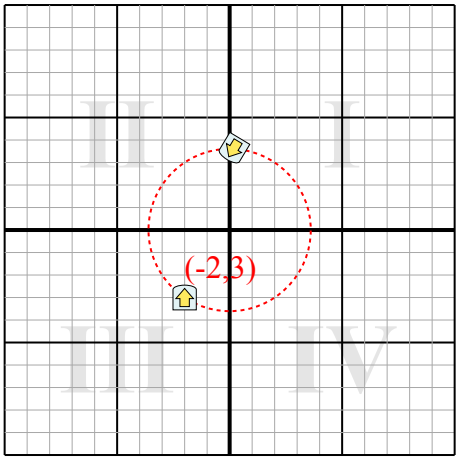
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

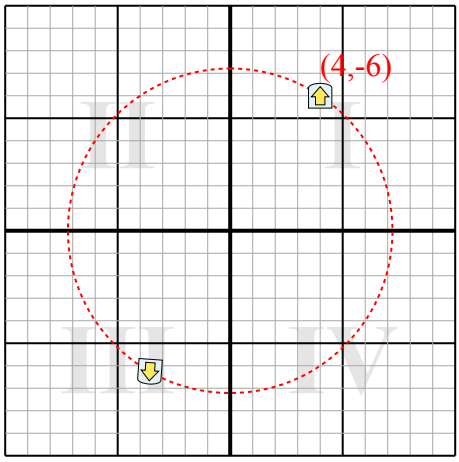
1) Поверните фигуру -230° вокруг точки (0;0).



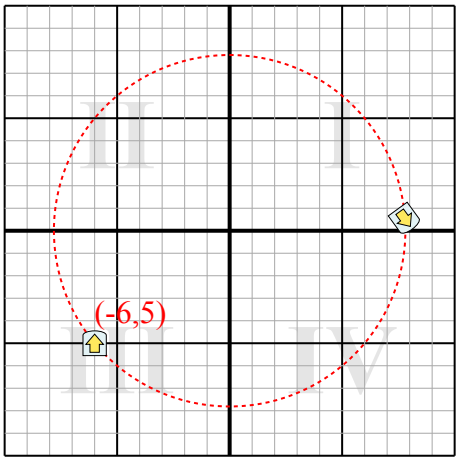
2) Поверните фигуру 149° вокруг точки (0;0).



3) Поверните фигуру -184° вокруг точки (0;0).



4) Поверните фигуру 216° вокруг точки (0;0).



Ответы

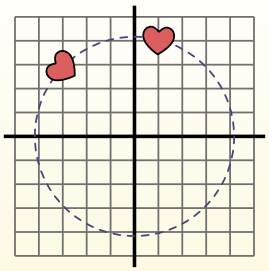
1. (-1,-4,3)
2. (0,2,3,6)
3. (-3,6,-6,3)
4. (7,8,0,5)

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

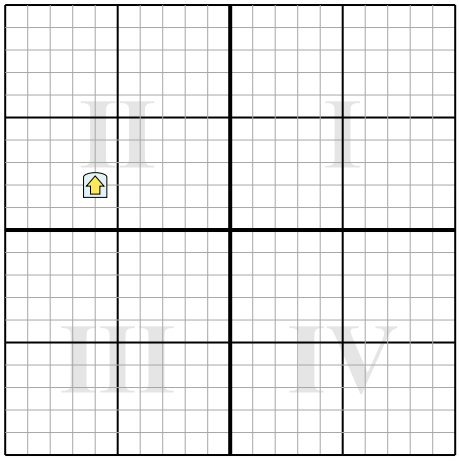
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

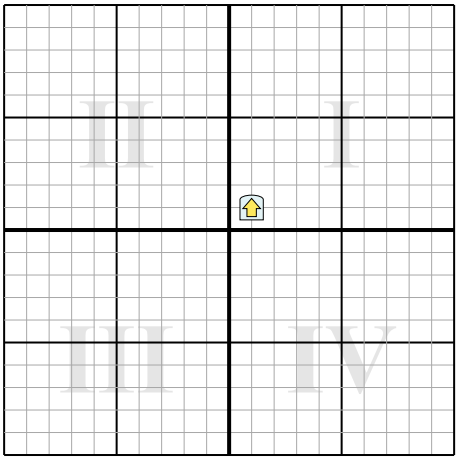
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

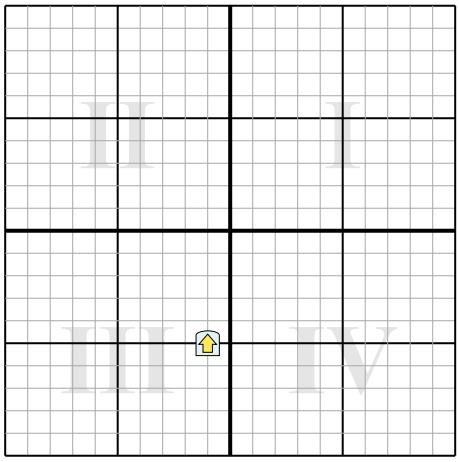
1) Поверните фигуру 203° вокруг точки (0;0).



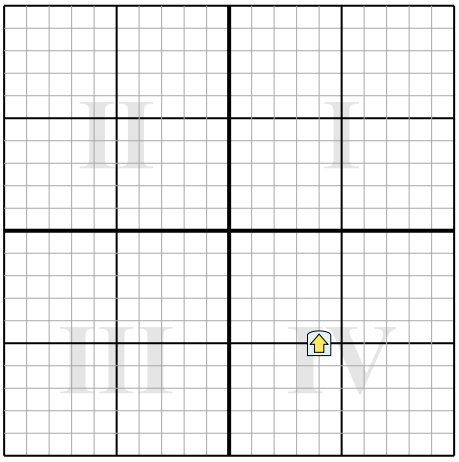
2) Поверните фигуру -120° вокруг точки (0;0).



3) Поверните фигуру 183° вокруг точки (0;0).



4) Поверните фигуру -35° вокруг точки (0;0).



Ответы

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

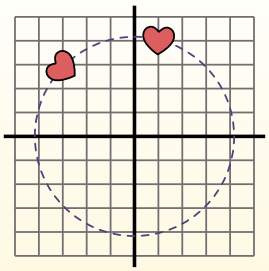
1-4	75	50	25	0

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

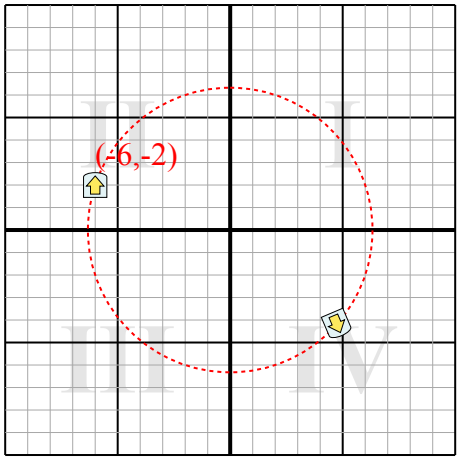
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

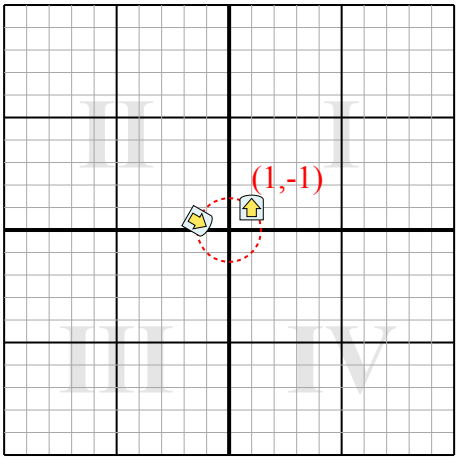
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

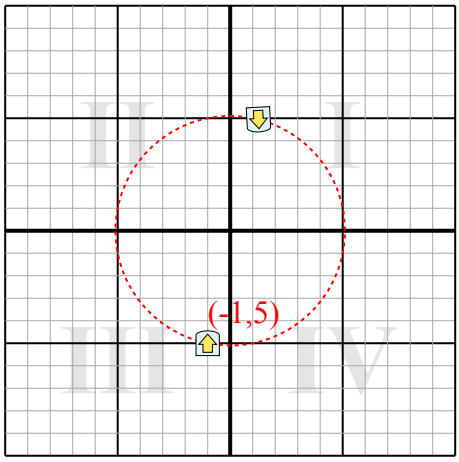
1) Поверните фигуру 203° вокруг точки (0;0).



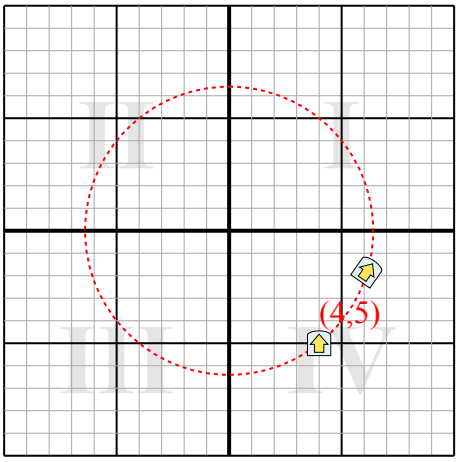
2) Поверните фигуру -120° вокруг точки (0;0).



3) Поверните фигуру 183° вокруг точки (0;0).



4) Поверните фигуру -35° вокруг точки (0;0).



Ответы

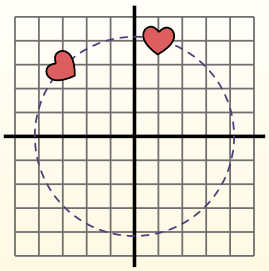
1. (4,7,-4,2)
2. (-1,4,0,4)
3. (1,3,4,9)
4. (6,1,-1,8)

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

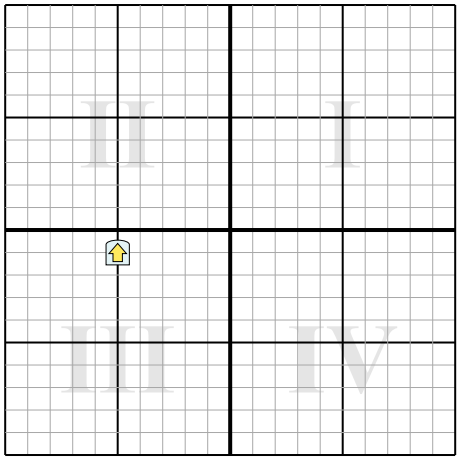
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

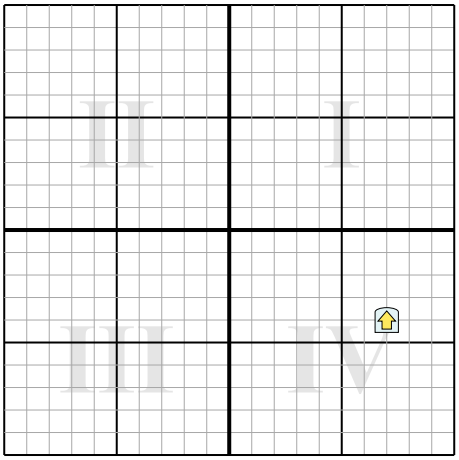
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

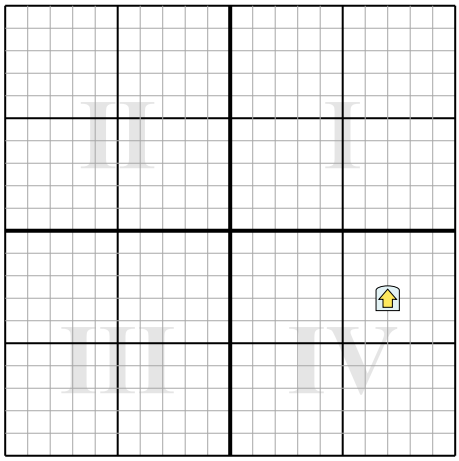
1) Поверните фигуру -154° вокруг точки (0;0).



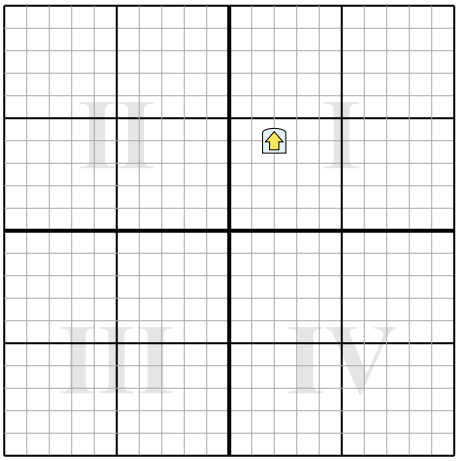
2) Поверните фигуру 182° вокруг точки (0;0).



3) Поверните фигуру 204° вокруг точки (0;0).



4) Поверните фигуру -127° вокруг точки (0;0).



Ответы

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

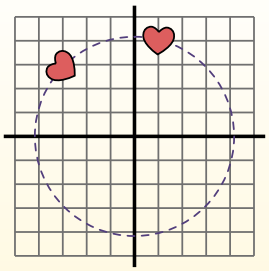
1-4	75	50	25	0

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

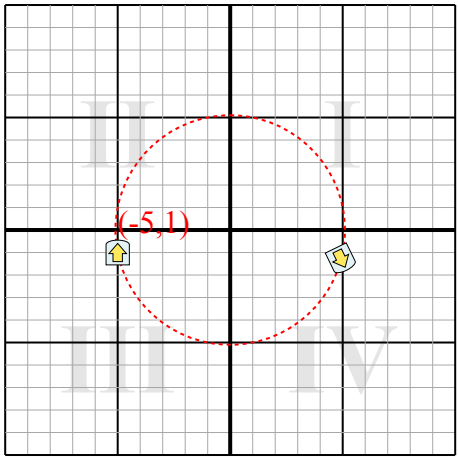
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

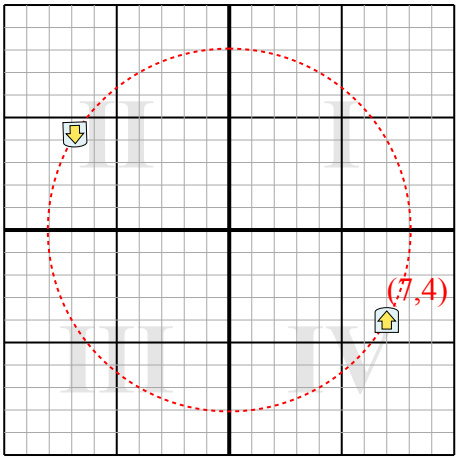
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

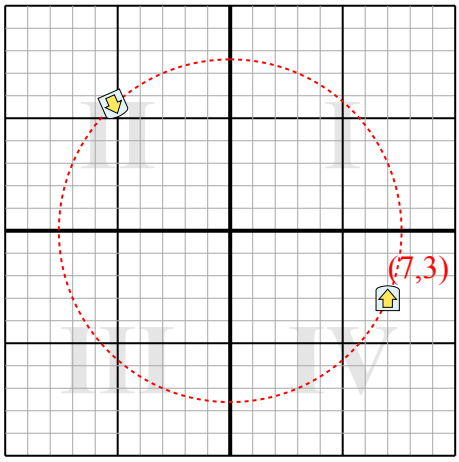
1) Поверните фигуру -154° вокруг точки (0;0).



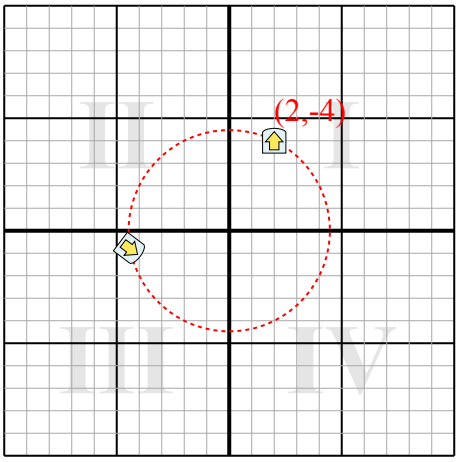
2) Поверните фигуру 182° вокруг точки (0;0).



3) Поверните фигуру 204° вокруг точки (0;0).



4) Поверните фигуру -127° вокруг точки (0;0).



Ответы

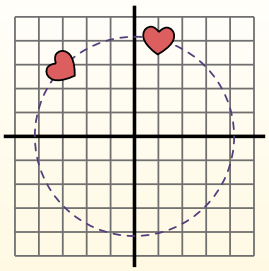
1. (4,9,-1,3)
2. (-6,9,4,2)
3. (-5,2,5,6)
4. (-4,4,-0,8)

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

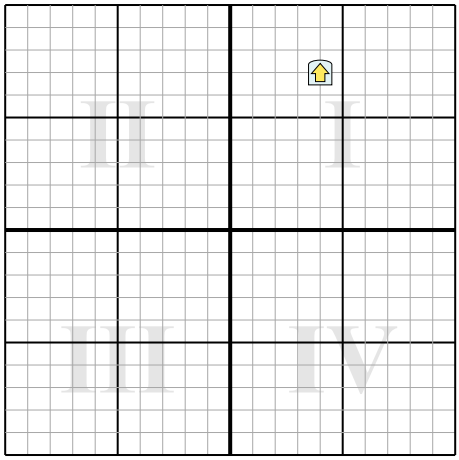
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

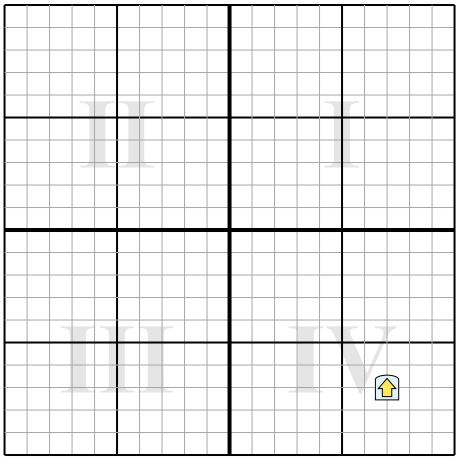
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

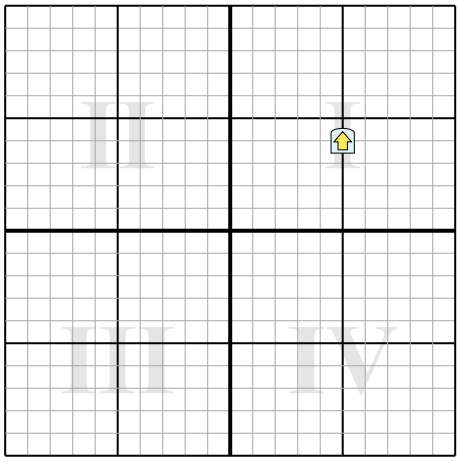
1) Поверните фигуру 99° вокруг точки (0;0).



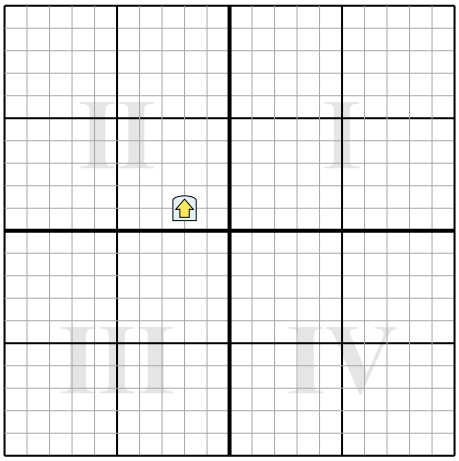
2) Поверните фигуру -40° вокруг точки (0;0).



3) Поверните фигуру -292° вокруг точки (0;0).



4) Поверните фигуру 45° вокруг точки (0;0).



Ответы

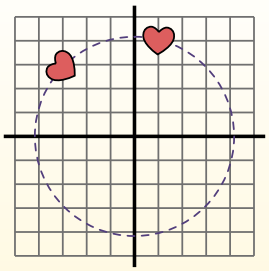
1. _____
2. _____
3. _____
4. _____

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

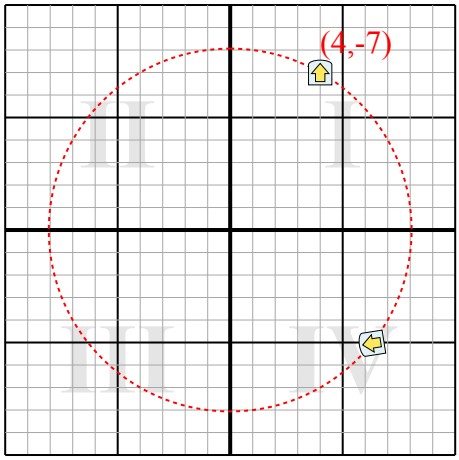
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

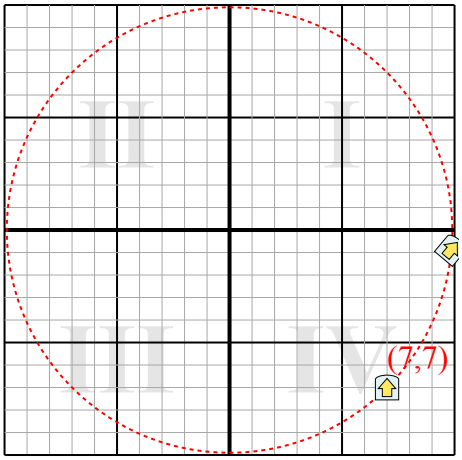
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

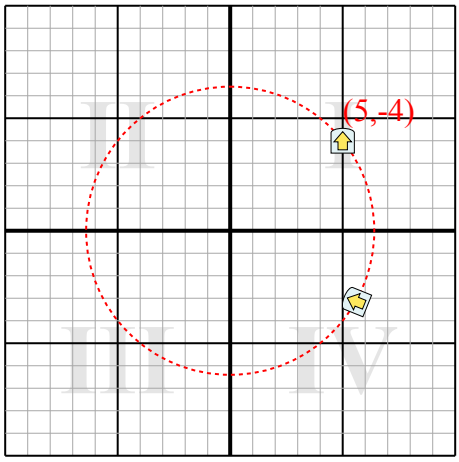
1) Поверните фигуру 99° вокруг точки (0;0).



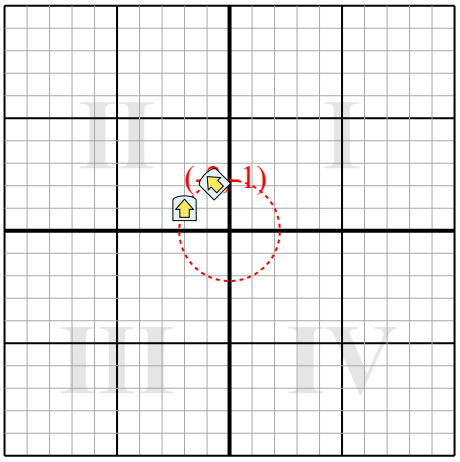
2) Поверните фигуру -40° вокруг точки (0;0).



3) Поверните фигуру -292° вокруг точки (0;0).



4) Поверните фигуру 45° вокруг точки (0;0).



Ответы

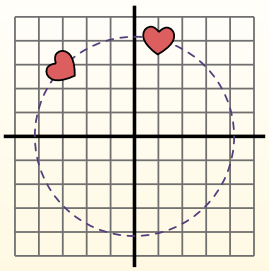
1. (6,3,-5)
2. (9,9,-0,9)
3. (5,6,-3,1)
4. (-0,7,2,1)

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

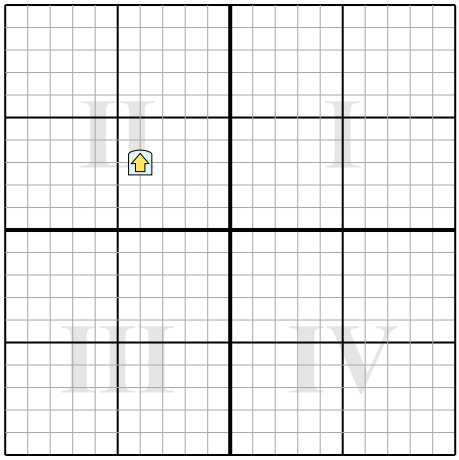
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

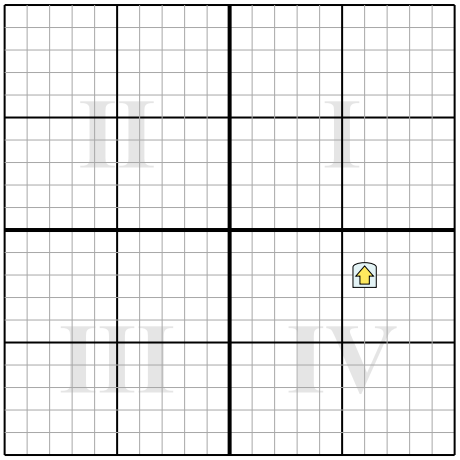
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

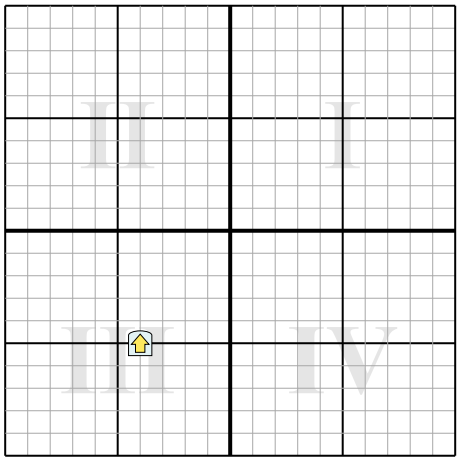
1) Поверните фигуру -53° вокруг точки (0;0).



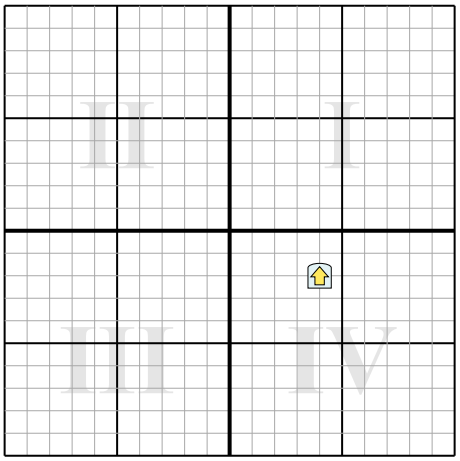
2) Поверните фигуру 235° вокруг точки (0;0).



3) Поверните фигуру 37° вокруг точки (0;0).



4) Поверните фигуру -129° вокруг точки (0;0).



Ответы

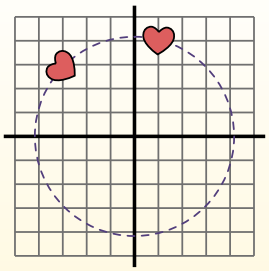
1. _____
2. _____
3. _____
4. _____

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

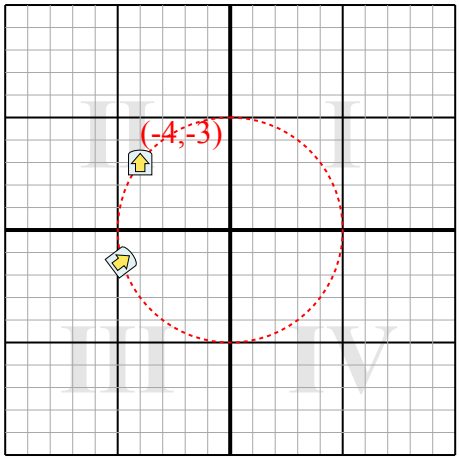
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

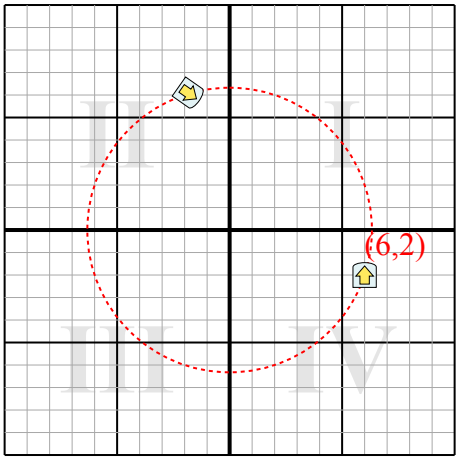
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

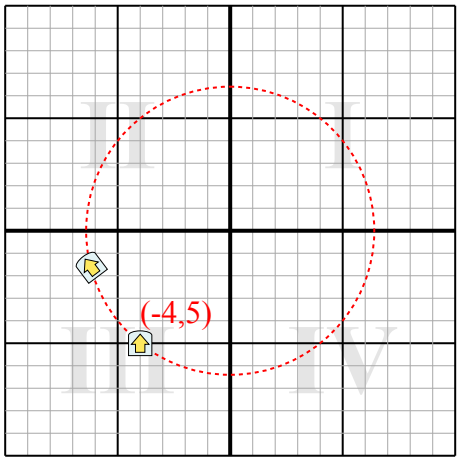
1) Поверните фигуру -53° вокруг точки (0;0).



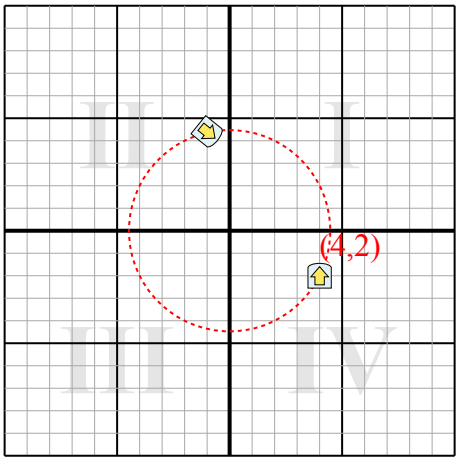
2) Поверните фигуру 235° вокруг точки (0;0).



3) Поверните фигуру 37° вокруг точки (0;0).



4) Поверните фигуру -129° вокруг точки (0;0).



Ответы

1. (-4,8,-1,4)
2. (-1,8,6,1)
3. (-6,2,-1,6)
4. (-1,4,4)

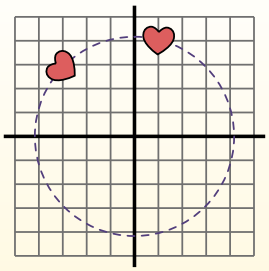
1-4	75	50	25	0

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

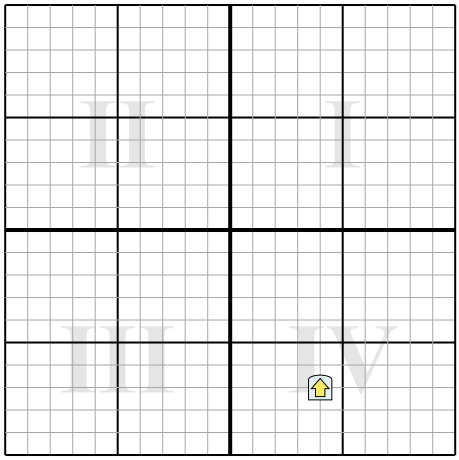
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

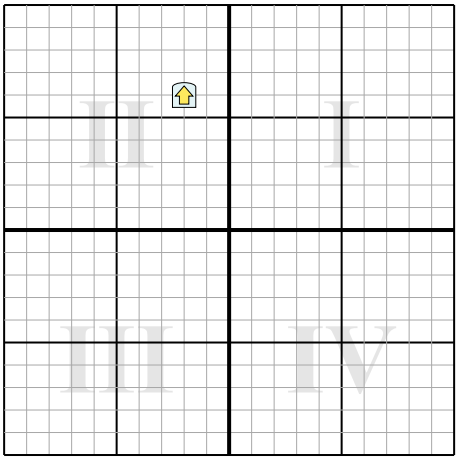
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

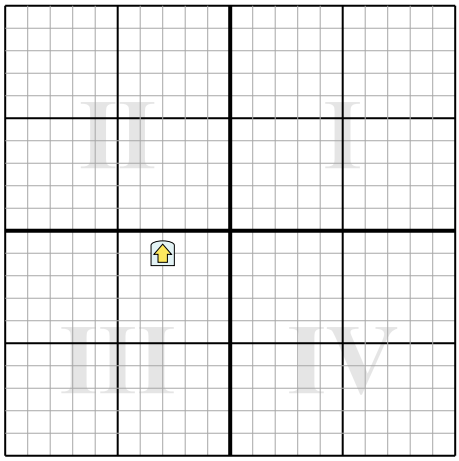
1) Поверните фигуру -91° вокруг точки (0;0).



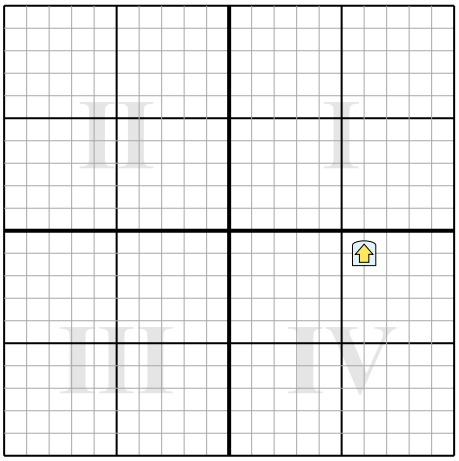
2) Поверните фигуру -189° вокруг точки (0;0).



3) Поверните фигуру -140° вокруг точки (0;0).



4) Поверните фигуру 202° вокруг точки (0;0).



Ответы

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

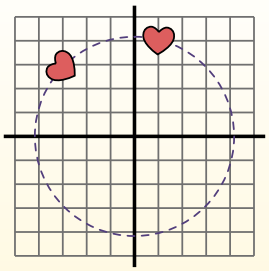
1-4	75	50	25	0

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

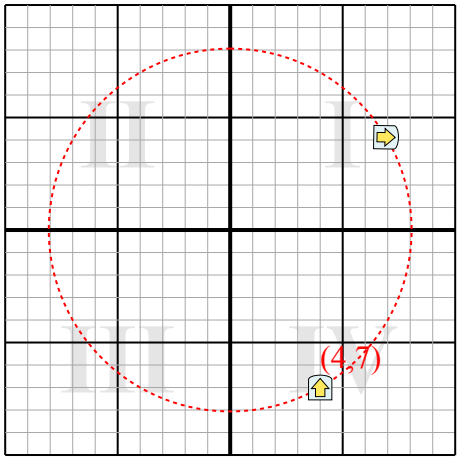
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

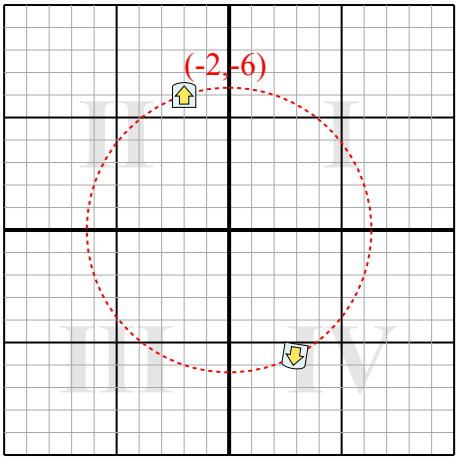
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

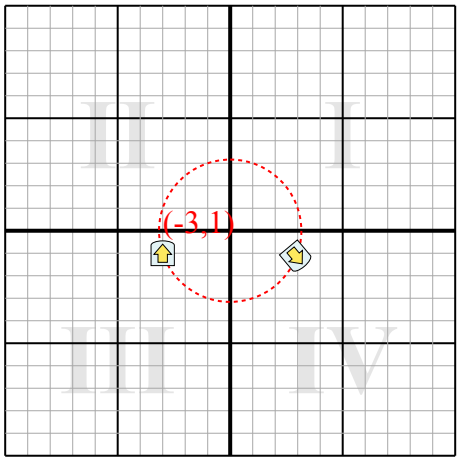
1) Поверните фигуру -91° вокруг точки (0;0).



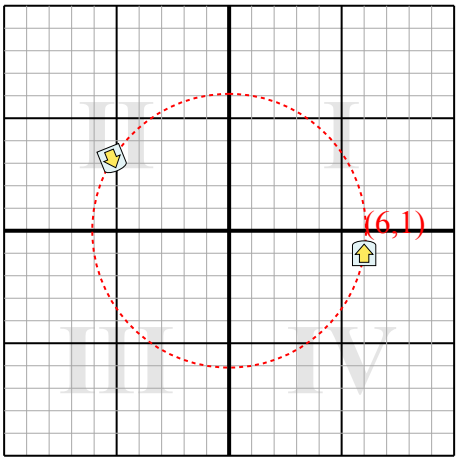
2) Поверните фигуру -189° вокруг точки (0;0).



3) Поверните фигуру -140° вокруг точки (0;0).



4) Поверните фигуру 202° вокруг точки (0;0).



Ответы

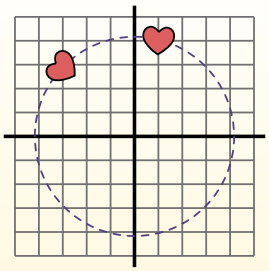
1. (6,9,4,1)
2. (2,9,-5,6)
3. (2,9,-1,2)
4. (-5,2,3,2)

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

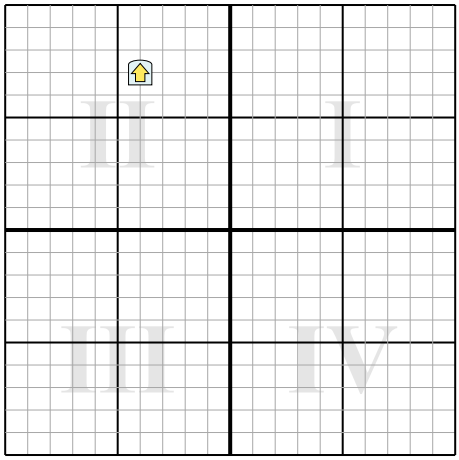
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

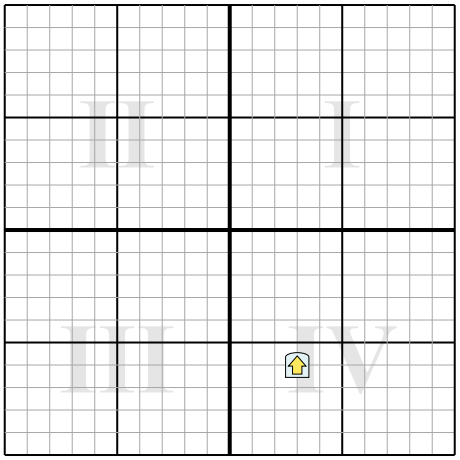
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

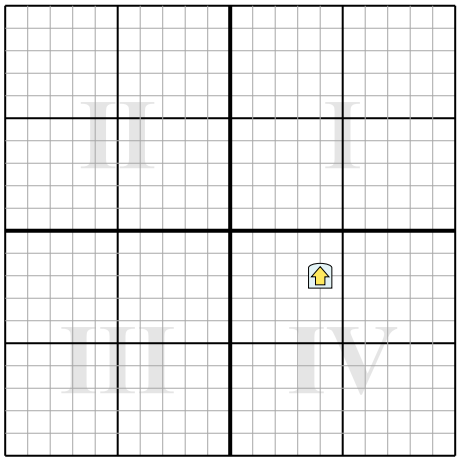
1) Поверните фигуру 91° вокруг точки (0;0).



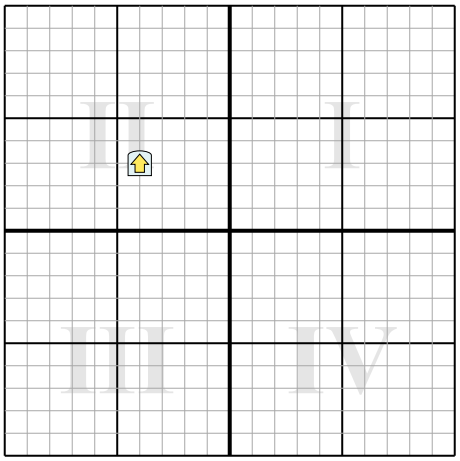
2) Поверните фигуру -105° вокруг точки (0;0).



3) Поверните фигуру 248° вокруг точки (0;0).



4) Поверните фигуру 140° вокруг точки (0;0).



Ответы

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

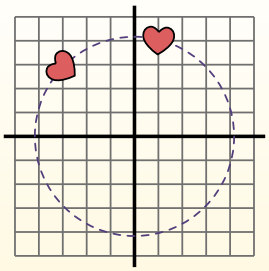
1-4	75	50	25	0

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

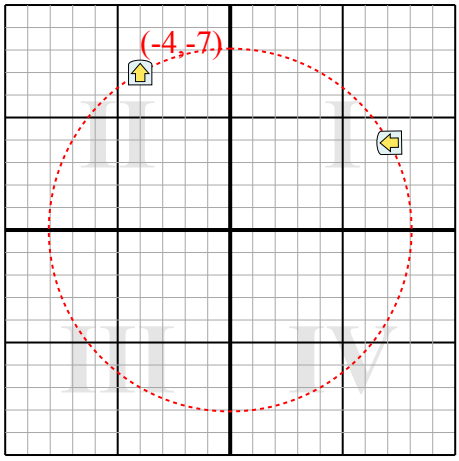
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

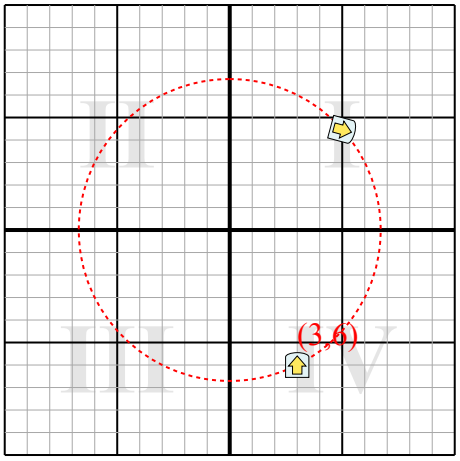
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

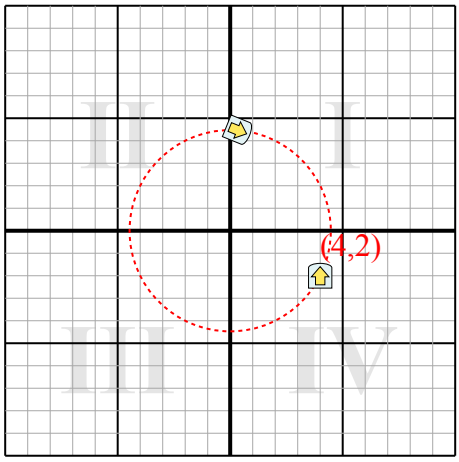
1) Поверните фигуру 91° вокруг точки (0;0).



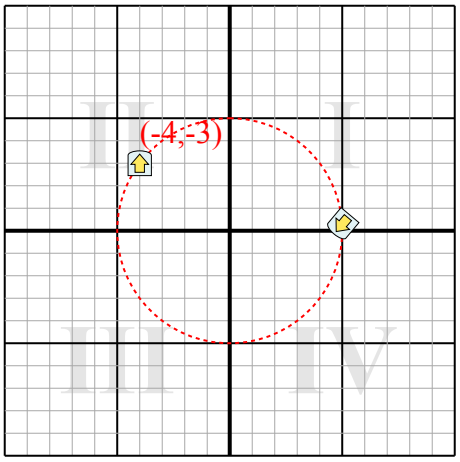
2) Поверните фигуру -105° вокруг точки (0;0).



3) Поверните фигуру 248° вокруг точки (0;0).



4) Поверните фигуру 140° вокруг точки (0;0).



Ответы

1. (7,1,3,9)
2. (5,4,5)
3. (0,4,4,5)
4. (5,0,3)

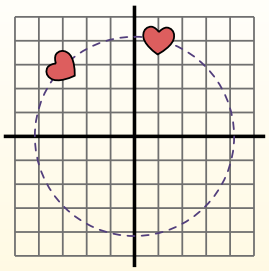
1-4	75	50	25	0

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

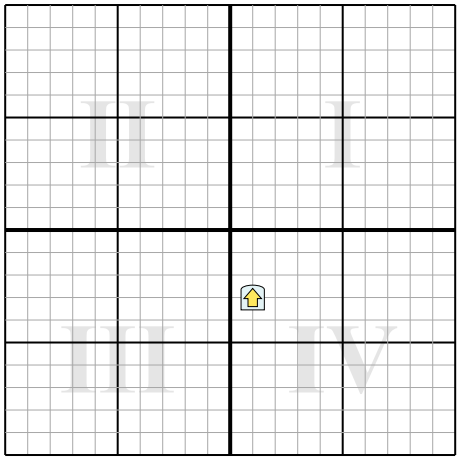
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

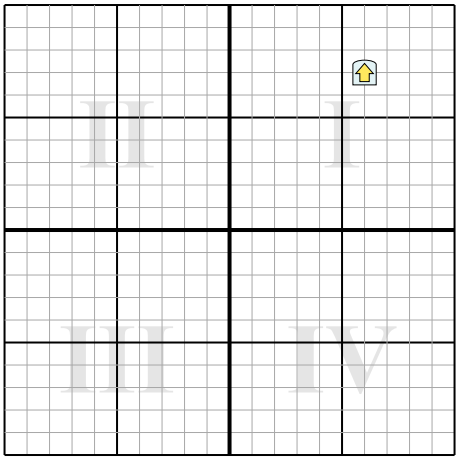
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

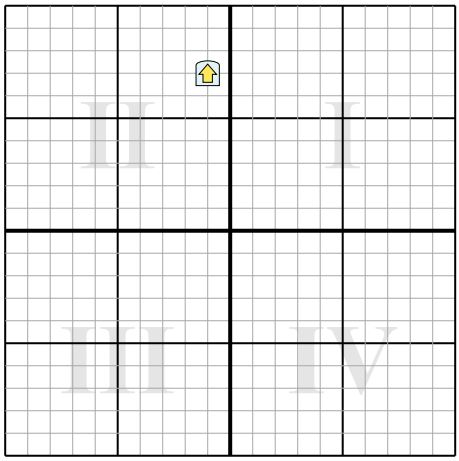
1) Поверните фигуру 255° вокруг точки (0;0).



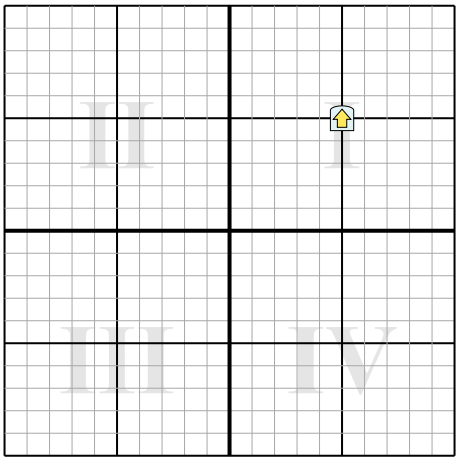
2) Поверните фигуру 95° вокруг точки (0;0).



3) Поверните фигуру -55° вокруг точки (0;0).



4) Поверните фигуру -34° вокруг точки (0;0).



Ответы

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

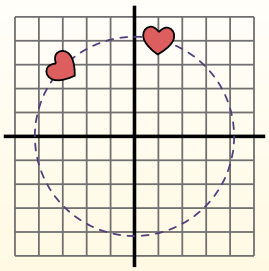
1-4	75	50	25	0

Поверните каждую фигуру. Определите новые координаты.

θ = Ângulo de rotação

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

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).
Vamos encontrar as coordenadas se girarmos a forma em 60°.



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

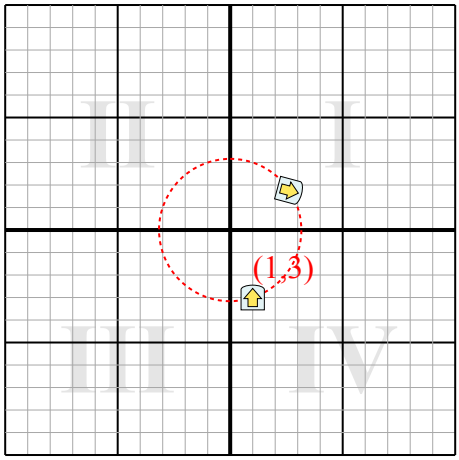
2. x1 = 1×0.5 - 4×0.87
y1 = 1×0.87 + 4×0.5

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

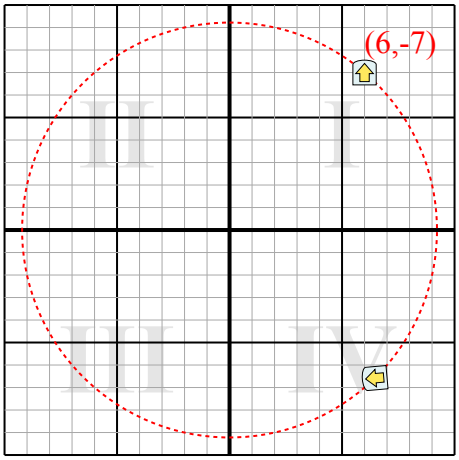
4. x1 = -2.98
y1 = 2.87

5. Al observar la forma, podemos ver que girado 60 ° está en (-2.98, 2.87).

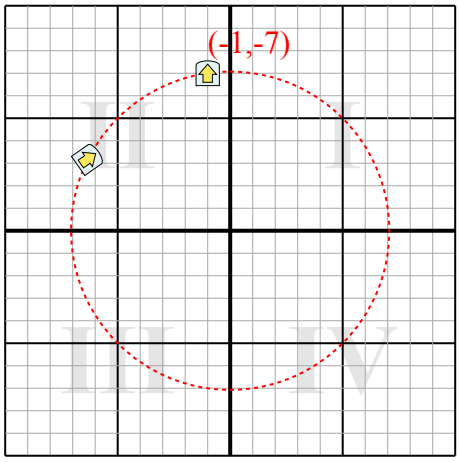
1) Поверните фигуру 255° вокруг точки (0;0).



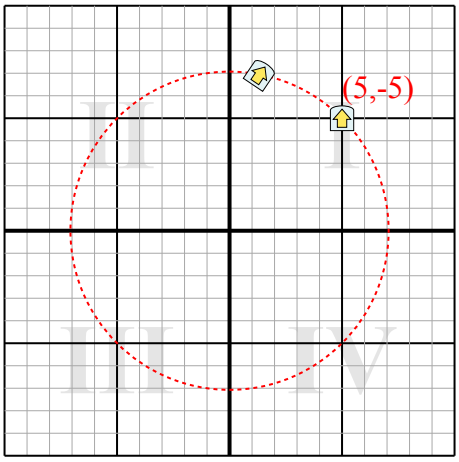
2) Поверните фигуру 95° вокруг точки (0;0).



3) Поверните фигуру -55° вокруг точки (0;0).



4) Поверните фигуру -34° вокруг точки (0;0).



Ответы

1. (2,6,1,7)
2. (6,5,-6,6)
3. (-6,3,3,2)
4. (1,3,6,9)

1-4	75	50	25	0