



Effectuez une rotation de chaque figure, en indiquant les nouvelles coordonnées.

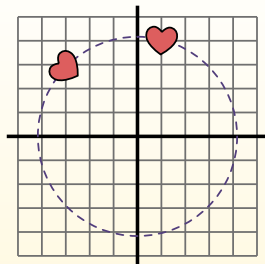
$\theta = \hat{\text{Angulo de rota\c{c}ao}}$

**F3rmla de rotaci3n**

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

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

En el ejemplo de la derecha, la forma est3 en las coordenadas (1,4).



Vamos encontrar as coordenadas se girarmos a forma em 60°.

$$1. \quad \begin{aligned} x_1 &= 1 \times \cos(60) - 4 \times \sin(60) \\ y_1 &= 1 \times \sin(60) + 4 \times \cos(60) \end{aligned}$$

$$2. \quad \begin{aligned} x_1 &= 1 \times 0.5 - 4 \times 0.87 \\ y_1 &= 1 \times 0.87 + 4 \times 0.5 \end{aligned}$$

$$3. \quad \begin{aligned} x_1 &= 0.5 - 3.48 \\ y_1 &= 0.87 + 2 \end{aligned}$$

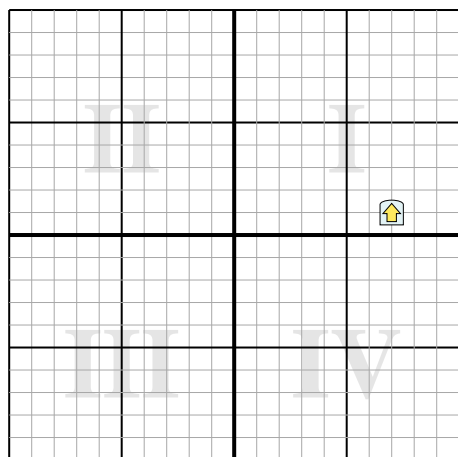
$$4. \quad \begin{aligned} x_1 &= -2.98 \\ y_1 &= 2.87 \end{aligned}$$

5. Al observar la forma, podemos ver que girado 60° est3 en (-2.98, 2.87).

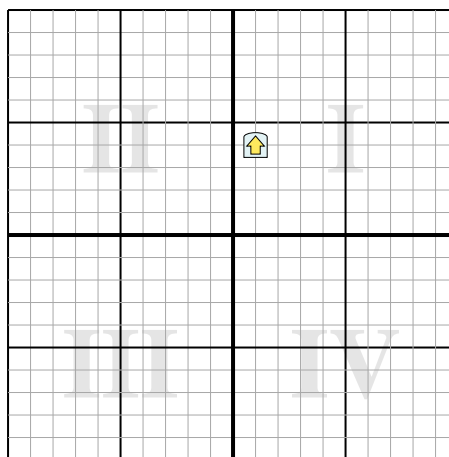
**R3sponses**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

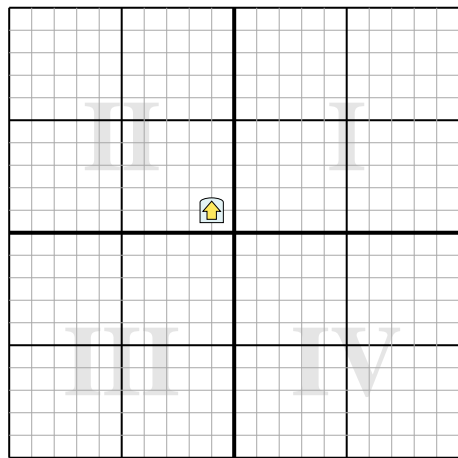
1) Effectuez une rotation de 76° autour du point (0,0).



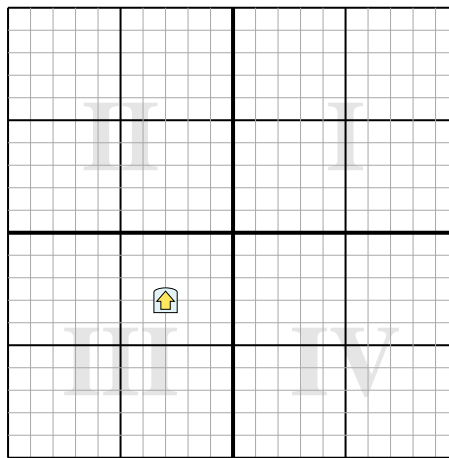
2) Effectuez une rotation de 192° autour du point (0,0).



3) Effectuez une rotation de 290° autour du point (0,0).



4) Effectuez une rotation de -62° autour du point (0,0).





Effectuez une rotation de chaque figure, en indiquant les nouvelles coordonnées.

$\theta = \hat{\text{Angulo de rota\c{c}ao}}$

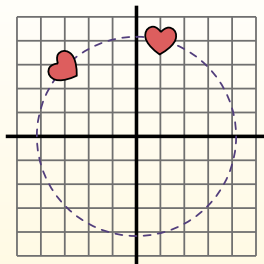
**Fórmula de rotación**

$$x1 = x \times \cos(\theta) - y \times \sin(\theta)$$

$$y1 = x \times \sin(\theta) + y \times \cos(\theta)$$

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).

Vamos encontrar as coordenadas se girarmos a forma em 60°.



$$1. \quad \begin{aligned} x1 &= 1 \times \cos(60) - 4 \times \sin(60) \\ y1 &= 1 \times \sin(60) + 4 \times \cos(60) \end{aligned}$$

$$2. \quad \begin{aligned} x1 &= 1 \times 0.5 - 4 \times 0.87 \\ y1 &= 1 \times 0.87 + 4 \times 0.5 \end{aligned}$$

$$3. \quad \begin{aligned} x1 &= 0.5 - 3.48 \\ y1 &= 0.87 + 2 \end{aligned}$$

$$4. \quad \begin{aligned} x1 &= -2.98 \\ y1 &= 2.87 \end{aligned}$$

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

**Réponses**

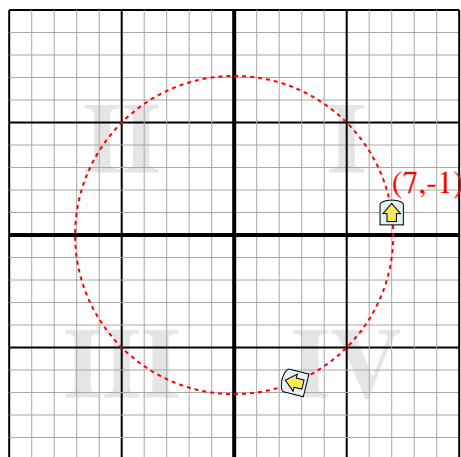
1. **(2,7,-6,6)**

2. **(-1,8,-3,7)**

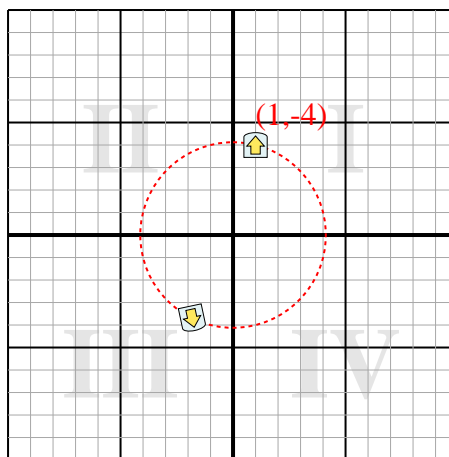
3. **(-1,3,-0,6)**

4. **(1,2,-4,1)**

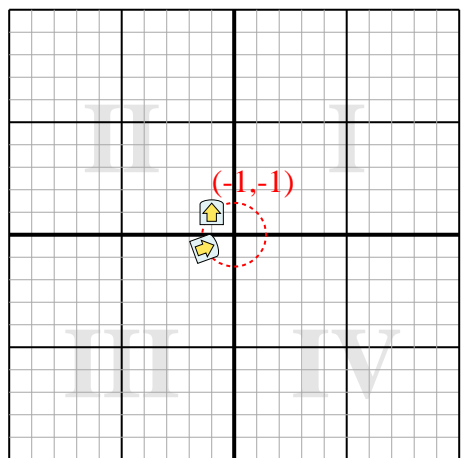
1) Effectuez une rotation de 76° autour du point (0,0).



2) Effectuez une rotation de 192° autour du point (0,0).



3) Effectuez une rotation de 290° autour du point (0,0).



4) Effectuez une rotation de -62° autour du point (0,0).

