

**Rotiere jede Form. Antworte mit dem neuen Koordinatenpunkt.** $\theta = \text{\AA ngulo de rota\c{c}\~ao}$ **F\~ormula de rotaci\~on**

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

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

En el ejemplo de la derecha, la forma est\~a en las coordenadas (1,4).

Vamos encontrar as coordenadas se girarmos a forma em 60\text{\textdegree}.



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

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

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

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

5. Al observar la forma, podemos ver que girado 60\text{\textdegree} est\~a en (-2.98, 2.87).

Antworten

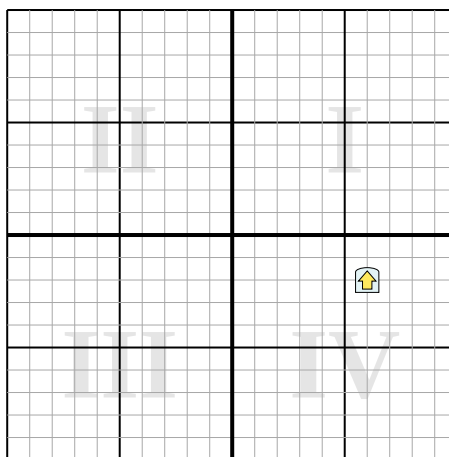
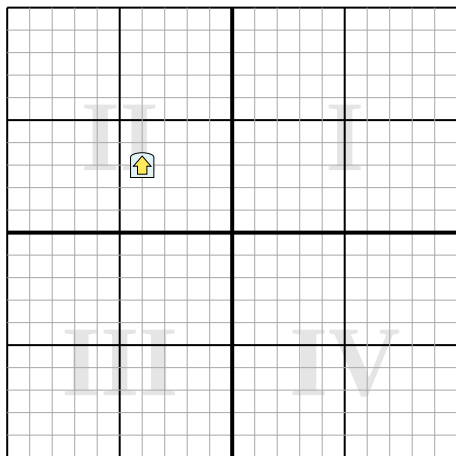
1. _____

2. _____

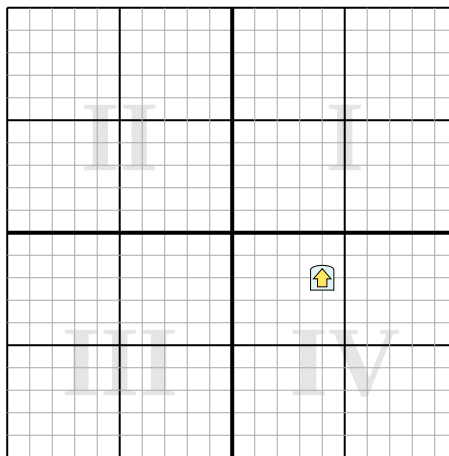
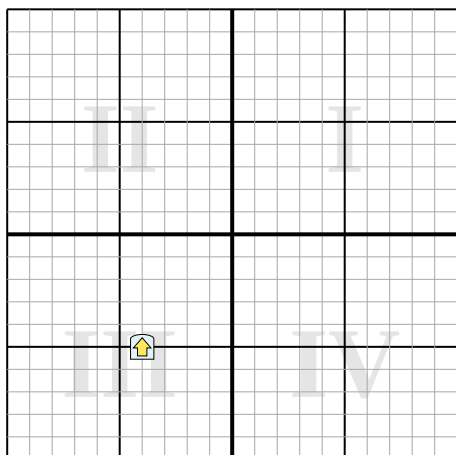
3. _____

4. _____

- 1) Rotiere die Figur -53\text{\textdegree} um den Punkt (0,0). 2) Rotiere die Figur 235\text{\textdegree} um den Punkt (0,0).



- 3) Rotiere die Figur 37\text{\textdegree} um den Punkt (0,0). 4) Rotiere die Figur -129\text{\textdegree} um den Punkt (0,0).





Rotiere jede Form. Antworte mit dem neuen Koordinatenpunkt.

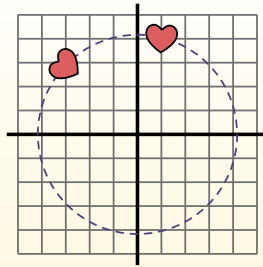
 $\theta = \text{Ângulo de rotação}$ **Fórmula de rotación**

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

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

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

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



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

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

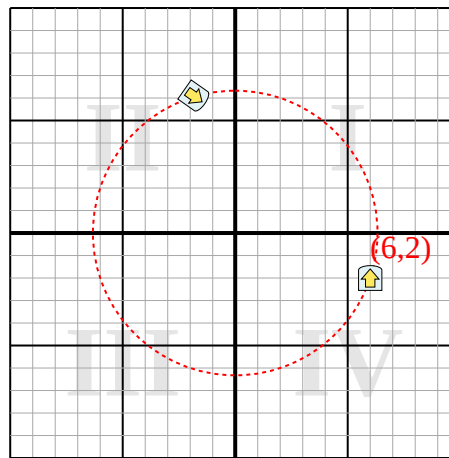
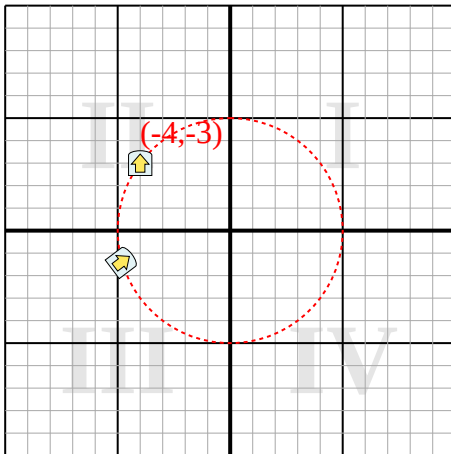
$$3. \quad \begin{aligned} x1 &= 0.5 - 3.48 \\ y1 &= 0.87 + 2 \end{aligned}$$

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

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

Antworten1. **(-4,8,-1,4)**2. **(-1,8,6,1)**3. **(-6,2,-1,6)**4. **(-1,4,4)**

- 1) Rotiere die Figur -53° um den Punkt (0,0). 2) Rotiere die Figur 235° um den Punkt (0,0).



- 3) Rotiere die Figur 37° um den Punkt (0,0). 4) Rotiere die Figur -129° um den Punkt (0,0).

