\[ \theta = \text{Angle of Rotation} \]

**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). Let's 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 the shape, we can see that rotated 60° it is at (-2.98, 2.87).

1) Rotate the shape 193° around the point (0,0).

2) Rotate the shape -207° around the point (0,0).

3) Rotate the shape -188° around the point (0,0).

4) Rotate the shape -79° around the point (0,0).
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**Answers**

1. (-5,4)
2. (3.1,-7.2)
3. (6.6,4.1)
4. (1.4,-1.8)