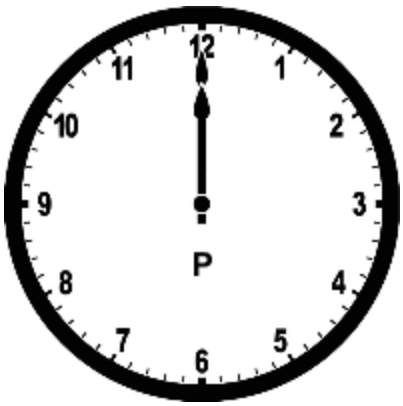
Name:_____
Group_____

Rotation



Geometric rotations are similar to a _____.
30 degrees.
60 degrees.
90 degrees.
About point _____. This point remains_____.

Which way is clockwise?_____
Which way is counterclockwise?_____

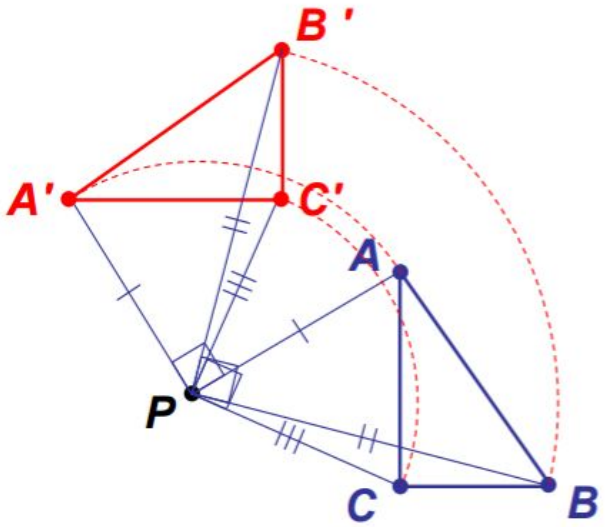
If we start at 3 o'clock, and we rotate 150 degrees counterclockwise around point P, what time will it be?_____

A _____ is a _____ _____, that _____ a figure clockwise or counterclockwise around a given_____ at a specific _____.

All rotations are defined by:

- The_____
- The _____
- The_____

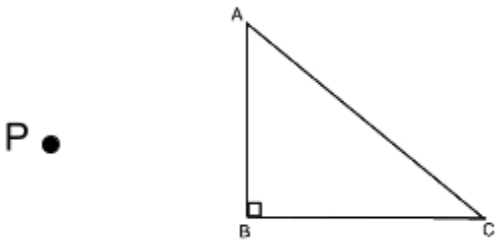
Let's look at this triangle.
Triangle ABC is rotated _____ counterclockwise around point P to form the image _____.



HOW TO ROTATE AN IMAGE:

Protractor/Ruler method:

1. Draw line P to A
2. Put a protractor's center on P and on line PA.
3. Put a mark showing 90 degrees. Then draw a line through it P and the mark.
4. Measure line PA and make PA' the same length.
5. Repeat for B and C.



Rotational Symmetry

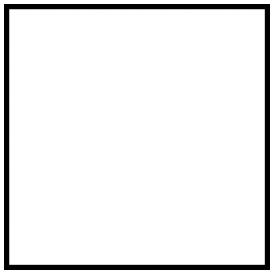
-If the figure has _____ when a figure can be _____ onto _____ by a rotation of _____ or less about the center of the figure.

Magnitude of Rotation

-The minimum amount of _____ required for a _____ to be mapped onto _____.

Center of symmetry:

-Point directly in the middle of each vertex.



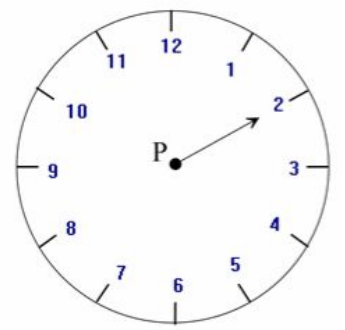
1. Draw the lines of symmetry. Each line must connect to at least one vertex.
2. Label center point P.
3. How many lines, n, are there from P to the vertices?
4. Calculate the magnitude of rotation, $\frac{360}{n}$

This means that if we rotate this figure _____ it will map onto _____. From any _____.

Examples:

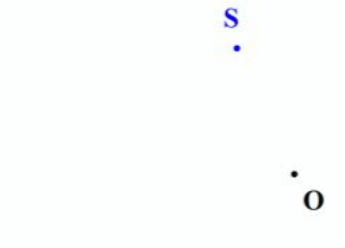
1)

An hour-hand pointing to 2 o'clock is rotated 150° in a counter clockwise direction around the centre point, P. What number will it be pointing to after the rotation?



2)

Point S is to be rotated 145° clockwise about point O. How should your protractor be placed, and the angle be marked, to locate the image point S'?



3)

In the following diagram, quadrilateral NOPQ is rotated 150° counter clockwise about point A to form its image N'O'P'Q'. Indicate on the diagram the correct position of N'O'P'Q'.