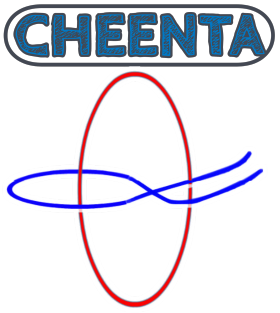


Cheenta

Locus of a circle

Locus of a circle implementation in GeoGebra, concept of rotation

Lesson Overview

This lesson is all about understanding the Locus.

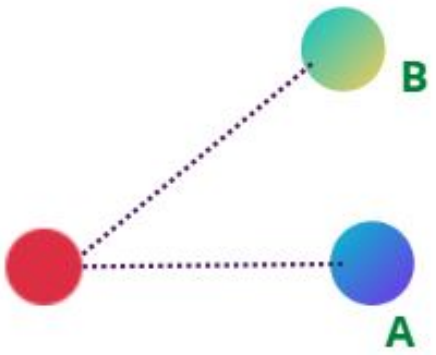
- We will learn about Locus
- We will learn about rotation
- We will understand the relation between Rotation and Locus

But before we start with anything let us do a little bit of warm-up.

1 Concept of Rotation

When we have one fixed point and one moving point the locus we get, is a circle. From this we can explain the concept of rotation as well.

Definition of Rotation A rotation is a circular movement of an object around a center of circle.



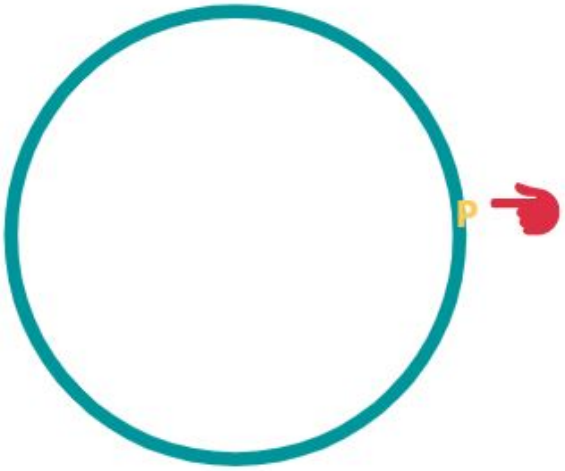
Suppose this A point wants to go to this B point and thus wants to come back to the initial position after travelling the whole way what kind of a path it will cover? It will cover a circular path. Thus the locus of the point A is circle and if this A point travel along this center of circle it will have one full rotation.

2 Let's use GeoGebra

Let's use GeoGebra to see the rotation in illustrated: Click this link : Click Here tolearn rotation in GeoGebra for both these cases the angle is same 45° but the space is not.

3 History of Rotation

During Babylon Civilization, they gave some wrong theory about revolution that Sun revolves around Earth. And also they said Sun takes 360 days to complete one revolution around Earth. Later on it got corrected that Earth is revolving around Sun and it takes 365 days to complete this full rotation. But this concept hasn't changed yet that for a circle - one full rotation is 360°.



If you start from point P and again want to come back to the same point that is called full rotation.

4 Some Useful Links

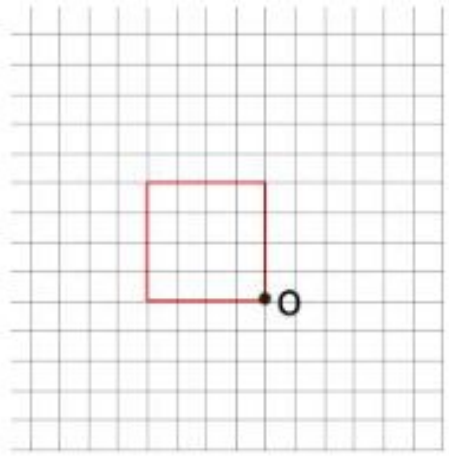
Click here to know more about the Earth's rotation: YouTube.

Another interesting link of The Sun's surprising movement across the sky: YouTube.

5 Problems on Locus:

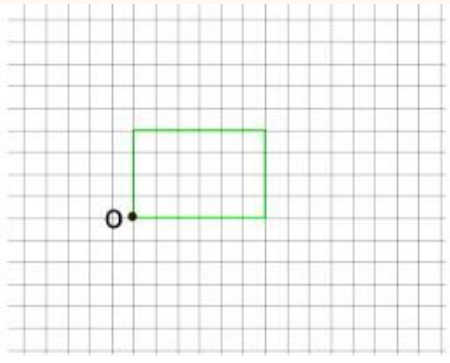
Problem 1

The square is rotated one complete turn about the point O.Where will be the next position?



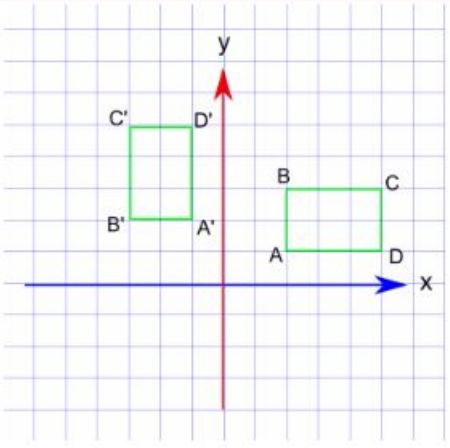
Problem 2

The rectangle is rotated a complete turn about the point O. Where will be the next position?



Problem 3

Rectangle A′B′C′D′ is the image of rectangle ABCD. What is the angle of rotation?



Finally before we end the session let us discuss some low - tool problems.

6 Low Tool Problems :

1. The value of $333 + 33 + 3$ is

   (A) 396

   (B) 399

   (C) 669

   (D) 369

   (E) 963

2. Which of these fractions is larger than $\frac{1}{2}$?

   (A) $\frac{2}{5}$

   (B) $\frac{3}{7}$

   (C) $\frac{4}{7}$

   (D) $\frac{3}{8}$

   (E) $\frac{4}{9}$

3. The measures of two angles of a triangle are 25° and 70°. The measure of the third angle is

   (A) 85°

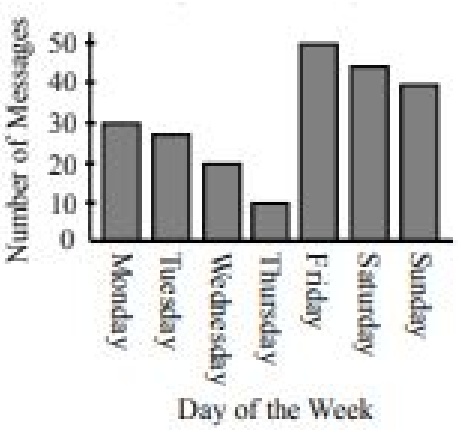
   (B) 105°

   (C) 65°

(D) 95°

(E) 75°

4. The graph shows the number of text messages received by Tanner in a given week. On what day did Tanner receive the most text messages?



(A) Friday

(B) Tuesday

(C) Thursday

(D) Saturday

(E) Wednesday