Parabola hyperbola ellipse circle equations pdf

The cone section is the intersection of the plane and the double right circle cone, by changing the angle and position of the junction, we can produce different types of cones, there are four basic types: the circle, the ellipses, the hyperbolas and the parabolas. There is no crossroads to pass the peak of the cone. If the right circle cone is cut by the plane, perpendicular to the axis of the cone, the intersection is circled. If the plane intersects with one of the pieces of the cone and its axis is not perpendicular to the axis, the intersection will be an ellipse. To create a parabola, the plane intersects, must be parallel to one side of the cone, and it should cut off a pair of cones, and eventually to create a hyperbola, the plane cuts off two pieces of the cone. For this, the slope of the cutting plane should be more than a cone. The common equations for any cone section are A x 2 + B x y + C 2 + D x + y + F = 0, where A, B, C, D, and F are constants. It is important to know the differences in the equation to help identify the type of cone that is displayed with a quick given equation. If B 2 − 4 A C is less than zero If there is a cone, it will be a circle or an oval. If B 2 − 4 A C equals zero, if there is a cone, it will be a parabola. If B 2 − 4 A C is greater than zero The standard format of the equation of the cone section: circle (x − h) 2 + (y − k) 2 = r 2 Center is (h , k) Radius is r . The middle and focus distances are c and c 2 = 2 − b 2 , > b > 0 ellipses with vertical core (x − h) 2 b 2 + (y − k) 2 a = 1 Center is (h , k). One of the center and focus distance is c and c 2 = 2 − b 2 , > b > 0 Hyperbola with horizontal cross axis (x − h) 2 a − 2 − k 2 b 2 = 1 Center is (h , k) The distance between vertices is 2 a . The distance between vertices is 2 c c 2 − (x − h) 2 b = 2 Center is (h , k) the distance from vertices is 2 a. The distance between the focus point is 2 c c 2 = 2 + b 2 Parabola with horizontal axis (y − k) 2 = 4 p (x − h) , p ≠ 0 Vertex is (h) (h + p , k) Directrix is line x = h − p Axis is line y = k Parabola with vertical axis (x − h) 2 = 4 p (y − k) , p ≠ 0 Vertex is (h , k). Logically, it provides an intersection of two or more straight. Similarly, the solution of the quadratic equation system will provide the intersection of two or more cones. The system of squared equations can be solved by removal or substitution, as in the case of linear systems. Example: Solve equation system x2 + 4 y 2 = 16 x 2 + y 2 = 9, the coefficient of x 2 is the same for both equations, so remove the second equation from the first equation to eliminate the x variable. Solution for y: 3 y 2 3 = 7 3 y 2 = 7 3 y = ± 7 3 use value of y to evaluate x . x 2 + 7 3 = 9 x 2 = 9 − 7 3 = 20 3 x = ± 20 3, so the solution is (+ 20 3 , + 7 3) , (+ 20 3 , − 7 3) (− 20 3 , + 73) now let's take a look at from geometric perspective. If you divide both sides of the first equation x 2 + 4 y 2 = 16 by 16, you will get x2 16 + y 2 4 = 1, that is, it is an ellipse centered on the origin with 4 cores and secondary axis 2. The curve created by cutting the right circular cone with the plane is called 'cone', it has a distinctive feature in euclidean geometry, the crest of the cone is divided into two nappes called nappes, the upper nappe in the figure B cone is contrasted by the plane, and the part has been called a cone part, depending on the position of the plane, the cone cut and the angle of the cone β. <a0>< Ellipse Parabola Hyperbola Circle Rear Mirror you see in your car or the large silver round you find at the subway is an example of curves. The curve has large applications everywhere, it is the study of planetary movements, the design of telescopes, satellites, reflections etc. cones consist of curves which are derived from the intersection of the plane with two right circle cones It has been extensively explained about the cone part in the 11th floor, let us discuss the formation of different parts of the formula cone and their importance. The formula of the cone section checks the formula for the different types of cones in the table provided here. b) The length of the primary axis is 2k, the distance between the center and the focus is c2 and c2 =h2−k2, h>k>0 Ellipse with vertical core (x−a)2/k2+(y−b)2/h2=1 is (a, b) The length of the secondary axis is 2k, the distance between the center and the focus is c2 =h2−k2, h>k>0 Hyperbola with horizontal cross axis (x−a). 2/k2=1 Center is (a,b). With vertical cross axis (x−a)2/k2−(y−b)2/h2=1 Center is (a,b). c2 = h2 + k2 Parabola with horizontal axis (y−b)2=4p(x−a), p≠0 Vertex is (a,b) The focus is (a+p,b) Directrix is the line x=a−p Axis is the line y=b Parabola with the vertical axis (x−a)2=4p(y),b≠00 The focus is (a+p,b) Directrix is the line x=b−p Axis is the line x=a focus anomaly, and Directrix of the Conic A cone section can be described as the locust of the P point moving in the plane of the fixed point F called focus (F) and the d fixed line known as directrix (with the focus not on d) in such a way that the ratio of the distance of the P point from the F-focus to the fixed distance is called a fixed distance. Now, if freak = 0, cone in a circle, If 0 <> <1, the= conic= is= an= an= ellipse= ellipse= e=1, the= conic= is= a= parabola= and = if= e=>1 It is hyperbola So the disorder is a measurement of the deviation of the oval from the circle. Assuming that the angle formed between the surface of the cone and its core is β, and the angle formed between the cutting plane and the α axis is an anomaly α; β Conic parameters in addition to focus anomalies and directrix, there are a few additional parameters defined under the cone section. Main axis: Two focus point lines or elliptical or hyperbole focal points. Its center is the center of the curve. Linear anomaly: The distance between the focus and the center of the Latus Rectum section: the chord of the part parallel to the directrix, which through focus parameters: distance from focus to corresponding directrix. Main axis: The chord joins with two vertices, it is the longest chord of the oval. Secondary axis: the shortest chord of the oval. Also read: Part of the cone considers the fixed vertical line 'l' and another line 'm' tilted at the angle 'α' contrasting 'l' at point V as shown below: The initials mentioned in the figure above A have the following meaning: V is the vertex of the cone l is the axis of the cone m, the line rotates as the cone's generator, let us talk briefly. Different cone sections occur when the plane cuts nappes (excluding vertex), circle, cone-shaped part β =90o. ellipse section ellipse =as= shown= in= figure= below.= conic= section= section= α= β, the= conic= section= formed= is= a= parabola= (represented= by= the = orange= curve)= as= shown= below.= conic= section= hyperbola= hyperbola= if=></90o,> <α, Conic Section Standard After Forms introduction of Cartesian coordinates, the focus-directrix property can be utilised to write the equations provided by the points of the conic section. plane= intersects= both = nappes= and =conic= section= so= formed= formed= a=a== hyperbola= coordinates, the= focus= direct rix property= can= utilised= the= equations= provided= by= the= points= of= the= conic= section.= when= the= coordinates= are= changed= along= with= the= rotation= and= translation= of= axes,= we= can=></α, then the plane intersects both nappes and conic section so formed is known as a hyperbola (represented by the orange curves). Conic Section Standard Forms After the introduction of Cartesian coordinates, the focus-directrix property can be utilised to write the equations provided by the points of the conic section. When the coordinates are changed along with the rotation and translation of axes, we can > กรวยถ้าα</1,> กรวยถ้าα</1,> These equations are standard for ellipses and hyperboles. The standard format has an x-axis as the primary axis and the starting point (0,0) ± is centered. 0) and the focus point (±c, 0) defines b by equation c2 = a2 − b2 for ellipses, and c2 = a2 + b2 for hyperbola for circle c =0, so a2 =b2 for parabola, the standard format has focus at the x axis at the point (a, 0) and directrix is an equation line with x =−a. In standard form, parabola always passes its origins. Circle: x2+Y2=A2 Ellipse: x2/a2 + y2/b2 = 1 Hyperbola: x2/a2 – y2/b2 = 1 Parabola: y2=4ax on a>0 part Conic sample if the plane cuts straight at the peak of the cone. The following cases may occur: α< β≤90 ° The plane then cuts off the word at a certain point. If α = β the plane when the intersection with a conical cone with a generator of cones. This condition is a degenerative form of parabola. If 0≤β<α The resulting part is a pair of contrasting straight lines. This condition is a degenerative form of hyperbola, download the BYJU learning app and get a private video where the concept of geometry has been described with the help of interactive video.