Answer on Question #57344 – Math – Analytic Geometry

Question

1. Which conic section does this equation represent?

X^2 - 4x + y^2 + 6y – 9 = 5

A: Parabola
B: Hyperbola
C: Circle
D: Ellipse

Solution

x^2 - 4x + y^2 + 6y – 9 = 5

(x-2)^2 - 4 + (y+3)^2 -9 -9 = 5

(x-2)^2 + (y+3)^2 = 27

It is an equation of circle. Coordinates of centre are (*2*, -3) and radius is $r = \sqrt{27} = 3\sqrt{3}$.

Answer: C: Circle

Question

2. Which conic section is represented by the equation shown below?
9x + 4y^2 + 18x = 16

A: Circle
B: Hyperbola
C: Parabola
D: Ellipse

Solution

9x + 4y^2 + 18x = 16

4y^2 = 16 - 27x

y^2 = 4 - 27/4x

y^2 = -27/4 (x - 16/27)

It is an equation of parabola. Coordinates of vertex are $(16/27,\ 0)$.

Answer: C: Parabola.