Answer on Question #46879 – Math – Analytic Geometry

Find an equation in standard form for the ellipse with the vertical major axis of length 18, and minor axis of length 16.

Solution:

For the ellipse with equation in standard form

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

we have **a** is semi-major axis (horizontal major axis) and the **b** is semi-minor axis are one half of the major and minor axes, respectively. In our case we have vertical major axis of length 18 and minor axis of length 16. Hence, we have relations **2b=18** and **2a=16.** So we obtained **b=9**, **a=8** and equation in standard form for the ellipse with the vertical major axis of length 18, and minor axis of length 16 is

$$\frac{x^2}{64} + \frac{y^2}{81} = 1.$$

Answer:

$$\frac{x^2}{64} + \frac{y^2}{81} = 1.$$