

Answer on Question #57275 – Math – Analytic Geometry

Question

Graph the following ellipse shown below

$$\frac{(x - 5)^2}{9} + \frac{(y + 2)^2}{25} = 1.$$

Solution

The equation of an ellipse is

$$\frac{(x - x_0)^2}{a^2} + \frac{(y - y_0)^2}{b^2} = 1$$

where

(x_0, y_0) is the center.

If $b > a$, then a, b are lengths of minor and major semiaxes respectively.

If $a > b$, then b, a are lengths of minor and major semiaxes respectively.

In our case we have

$$\begin{aligned}(x_0, y_0) &= (5, -2); \\ a &= 3; \\ b &= 5; \\ b &> a.\end{aligned}$$

Thus, we get

