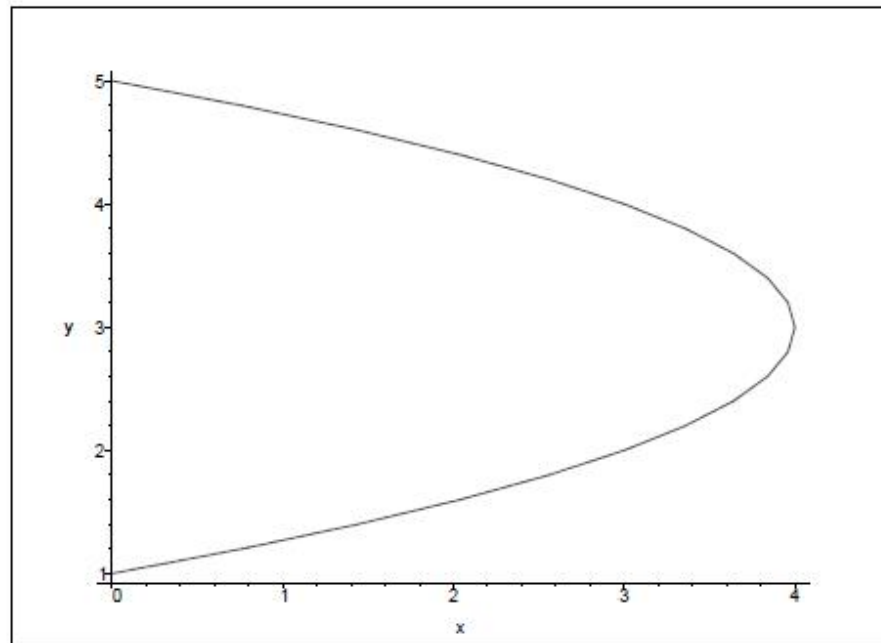


Q-1) Let R be the region in the plane bounded by the curve $(y - 3)^2 + x = 4$ and the y -axis. Sketch this region and write the limits of integration in the following integrals, into the given boxes.

(Grading: sketch=4 points, each correctly filled box=2 points.)

$$\int_{\boxed{}}^{\boxed{}} \int_{\boxed{}}^{\boxed{}} dx dy = \int_{\boxed{}}^{\boxed{}} \int_{\boxed{\phantom{3 - \sqrt{4 - x}}}}^{\boxed{\phantom{3 + \sqrt{4 - x}}}} dy dx.$$

Solution:



$$\int_{\boxed{1}}^{\boxed{5}} \int_{\boxed{0}}^{\boxed{4 - (y - 3)^2}} dx dy = \int_{\boxed{0}}^{\boxed{4}} \int_{\boxed{3 - \sqrt{4 - x}}}^{\boxed{3 + \sqrt{4 - x}}} dy dx.$$