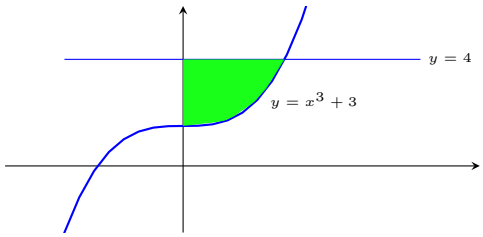
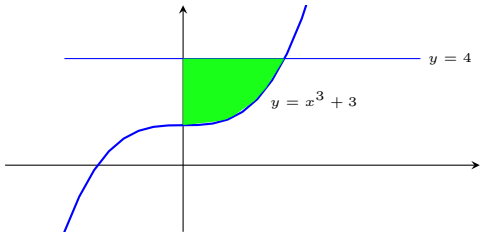
Q1) Consider the region in the first quadrant enclosed between $y = x^3 + 3$, $y = 4$, and y-axis.
Find the volume of the solid of revolution in the cases below. (**Do not evaluate the integrals**)

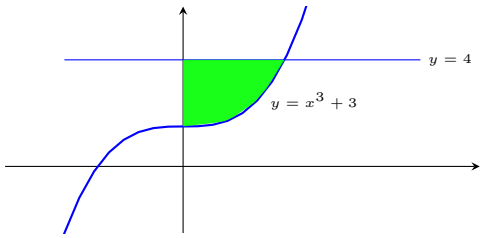
(a) The axis of revolution is the y-axis. Use the disk method.



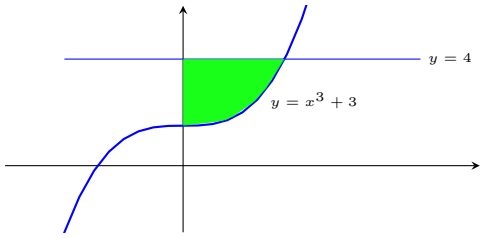
(b) The axis of revolution is the x-axis. Use the washer method.



(c) The axis of revolution is the line $y = 1$. Use the shell method.

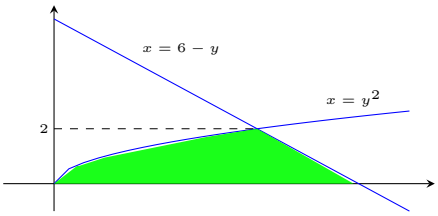


(d) The axis of revolution is the line $x = -1$. Use the shell method.

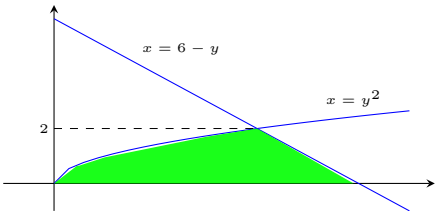


(**Q2**) Consider the region in the first quadrant enclosed between $x = y^2$, $x = 6 - y$, and x-axis.
Find the volume of the solid of revolution in the cases below. (**Do not evaluate the integrals**)

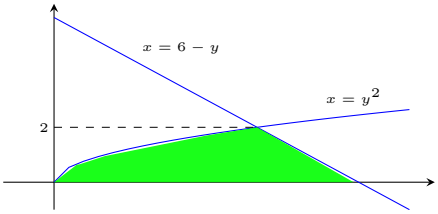
(a) The axis of revolution is the y-axis. Use the washer method.



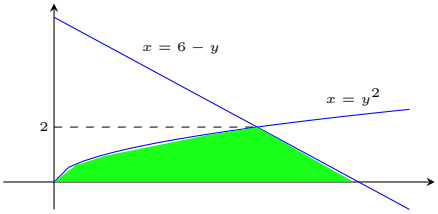
(b) The axis of revolution is the line $x = -1$. Use the washer method.



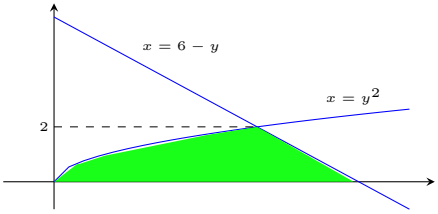
(c) The axis of revolution is the x-axis. Use the shell method.



(d) The axis of revolution is the line $y = 4$. Use the shell method.

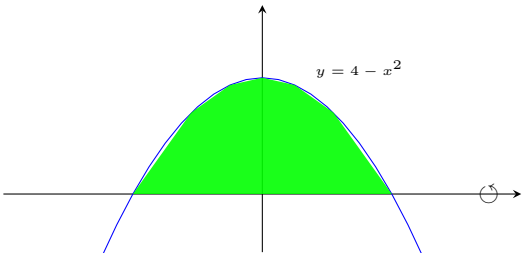


(e) The axis of revolution is the x-axis. Use the disk method.

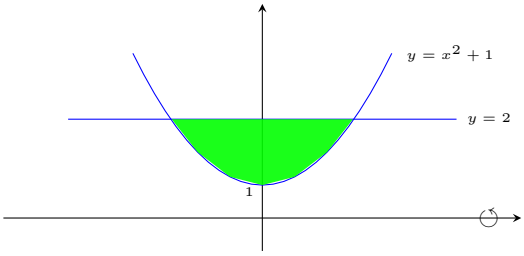


Q3) Find the volume of the solid of rotation for each case below.
(Do not Evaluate the integral)

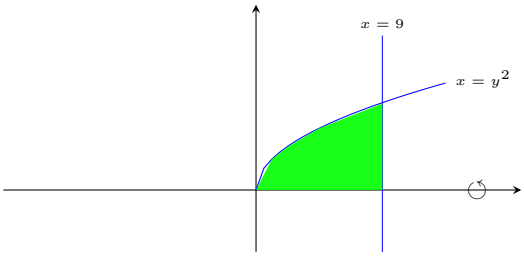
(a) Rotation about x-axis. Use the disk method.



(b) Rotation about x-axis. Use the washer method.



(c) Rotation about x-axis. Use the shell method.



(d) Rotation about $y = 2$. Use the shell method.