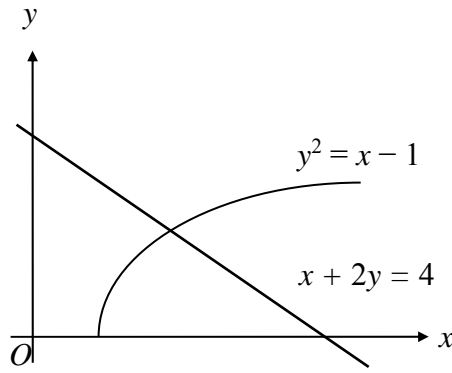
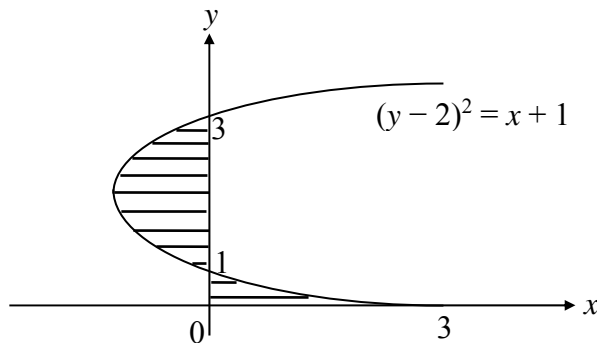


Year 4 Math Assignment 23: Integration

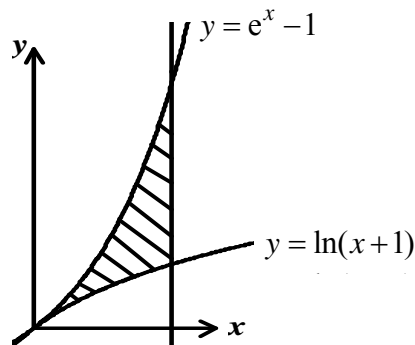
- Find the area bounded by the curve $x = y^{\frac{1}{3}}$, y -axis and the line $y = 8$ and the volume generated when this area is revolved 360° about the y -axis.
- Find the area bounded by the curves $y^2 = x - 1$, $x + 2y = 4$, $x = 0$ and $y = 0$ and the volume generated when this area is revolved 360° about the x -axis.



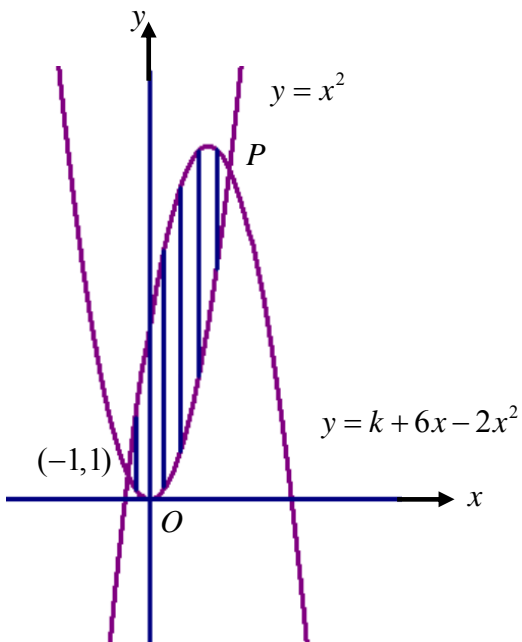
- Find the total area of the shaded regions and the volume generated when the entire area is rotated 360° about the y -axis.



- The diagram shows part of the graphs of $y = \ln(x+1)$, $y = e^x - 1$ and the line $x = 1.5$.
 - Find the area of the region bounded by the three graphs.
 - Find the volume generated when the shaded area is rotated 360° about the y -axis.



5. The curves $y = x^2$ and $y = k + 6x - 2x^2$ intersect at the points $(-1, 1)$ and P as shown.



- (i) Find the value of k and the coordinates of P .
(ii) Find the area of the shaded region.
(iii) Find the volume generated when the shaded area is rotated 360° about the x -axis.
6. Find the value of n such that the area of $A + C =$ area of B .

