

Math 101 – WORKSHEET 8
SUBSTITUTION, AREA BETWEEN CURVES

- (1) (Area between curves) Find the area of the finite region bounded by the y -axis, the graph of $y = \arcsin(x)$ and the line $y = \frac{\pi}{2}$.

- (2) Solids of revolution

- (a) The area between the x -axis, the curve $y = x^2$ and the line $x = 5$ is revolved about the y -axis. What is the volume of the resulting region?

(b) (Final, 2014) Find the volume of the solid generated by rotating the finite region bounded by $y = \frac{1}{x}$ and $3x + 3y = 10$ about the x -axis. It will be useful to sketch the region first.

(c) The area between the y -axis, the curve $y = x^2$ and the line $y = 4$ is rotated about the y -axis. What is the volume of the resulting region?