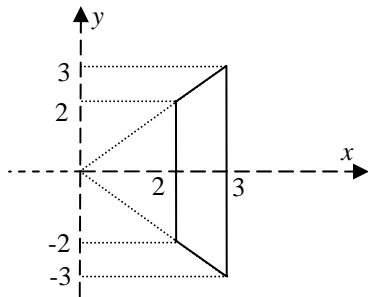# MIDTERM 1 (Make Up)

MATH 1352

- Answer all the questions

- Show all the calculations

- No computers or calculators allowed

1. Find the area bounded by the curve $y = \sin(x)$ and the $x-$axis, in the region between $x = 0$ and $x = 3\pi/2$.

2. Find the volume of a rectangular based pyramid whose base is 8ft by 6ft and height is 5ft and each side is an isosceles triangle.

3.

The trapezoidal region marked by the solid line in the figure is rotated about the y-axis. Calculate the volume of the solid generated.

4. Calculate the length of the segment of the curve $y = (3x)^{\frac{2}{3}} + 1$ from $(0,1)$ to $(9,10)$. The length formula is given by $L = \int \sqrt{1 + \left(\frac{dy}{dx}\right)^2}\, dx$.

5. The area bounded by the curves $y = x^2 - 4x + 5$, $x = 1, x = 4$ and the x-axis is rotated about the x-axis. Find the volume.