MATH 1710: Tutorial 2 (Areas)

1. Find the area of the region bounded by the curves

   (a) $x = 2ye^{-y^2}$, $y = x$

   (b) $y = \ln x^2$, $y = 1 - x^2$, $y = 1$

   (c) $y = \dfrac{2}{x+2}$, $y = x^3 + 3x - 1$, $x = 0$

   (d) $y^2 = x^2(x^2 - 4)$, $x = 5$

2. Find the area enclosed by the line $y = x - 1$ and the parabola $y^2 = 2x + 6$.

3. Find the area of the region in the first quadrant that is bounded above by $y = \sqrt{x}$ and below by the $x-$axis and the line $y = x - 2$.

4. Find the area of the region enclosed by the curves $x = 0$, $y = e^x$ and $y = e^{2x} - 2$.

5. Find the area of the region bounded by the curves $y = x^2 - 1$ and $x^2 + y^2 = 3$.