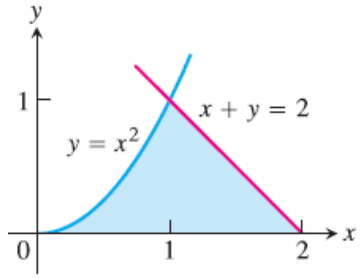
MATH 104 TUTORIAL 3

1- Use substitution formula to evaluate integrals

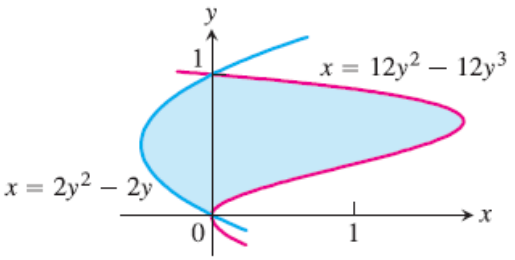
a) $\int_0^{\pi} 3\cos^2 x \sin x \, dx$ b) $\int_{-\sqrt{7}}^{0} t(t^2 + 1)^{1/3} \, dt$ c) $\int_0^{\pi/2} \frac{\sin w}{(3 + 2\cos w)^2} \, dw$

2- Find the total areas of the shaded regions in Exercises

a)



b)



3- Find the areas of the regions enclosed by the lines and curves

a) $y = 7 - 2x^2$ and $y = x^2 + 4$ b) $x + y^2 = 3$ and $4x + y^2 = 0$

c) $y = 8\cos x$ and $y = \sec^2 x$, $-\pi/3 \le x \le \pi/3$