Math 141 **name** Otto Smackew
Quiz 2 A
January 22, 2016

1. ***SET UP*** the definite integral to find the area of the region bounded by the graphs of the equations $y = 3 - x^2$ and $y = x + 1$.

top: $y=3-x^2$, bottom: $y=x+1$

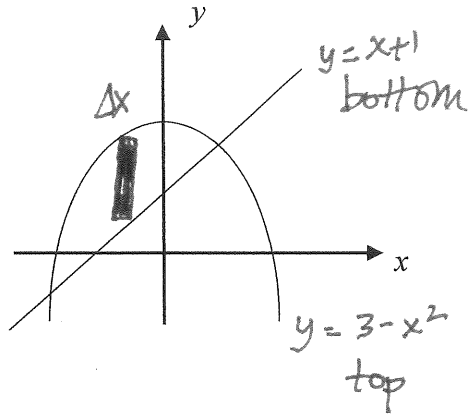
limits:

$3-x^2 = x+1$

$x^2+x-2=0$

$(x+2)(x-1)=0$

$x=-2, 1$



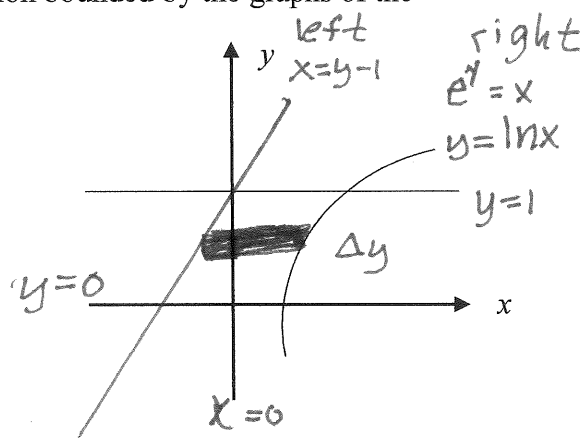
$$A = \int_{-2}^{1} \left[(3-x^2)-(x+1)\right] dx$$

2. ***SET UP*** the definite integral to find the area of the region bounded by the graphs of the equations $y = lnx$, $x = 0$, $y = 0$ and $y = 1$

limits: given $y=0$, $y=1$

right: $x=e^y$

left: $x=y-1$



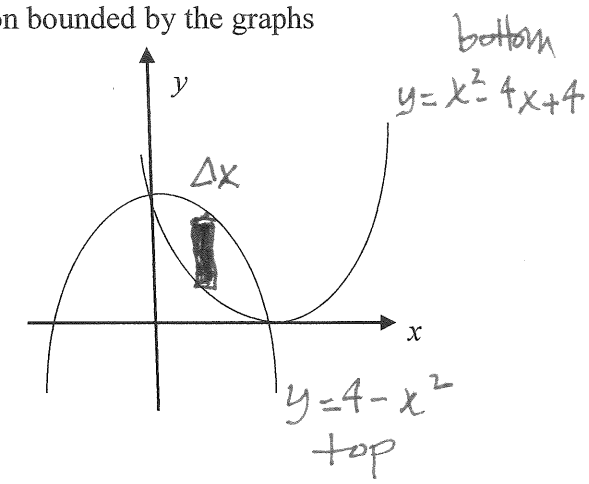
$$A = \int_{0}^{1} \left[e^y-(y-1)\right] dy$$

Math 141 **name** Otto Smackew
Quiz 2 B
January 22, 2016

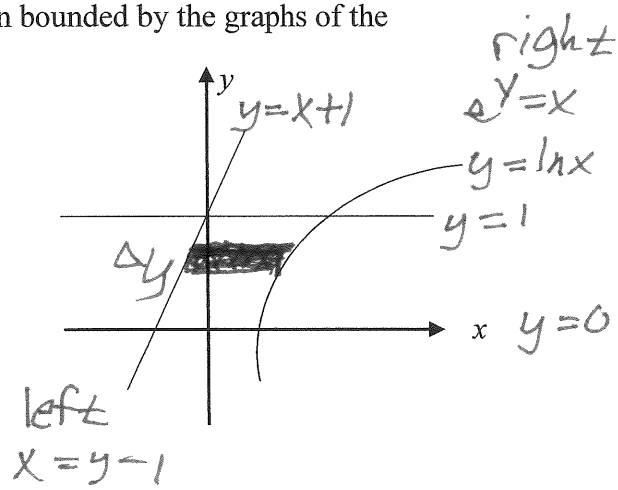
1. ***SET UP*** the definite integral to find the area of the region bounded by the graphs of the equations $y = 4 - x^2$ and $y = x^2 - 4x + 4$.

top: $y = 4 - x^2$
bottom: $y = x^2 - 4x + 4$
limits: $4 - x^2 = x^2 - 4x + 4$
$2x^2 - 4x = 0$
$2x(x-2) = 0$
$x = 0, 2$

$$A = \int_0^2 \left[(4 - x^2) - (x^2 - 4x + 4)\right] dx$$



2. ***SET UP*** the definite integral to find the area of the region bounded by the graphs of the equations $y = lnx$, $x = y - 1$, $y = 0$ and $y = 1$

limits: given: $y = 0, y = 1$
right: $x = e^y$
left: $x = y - 1$

$$A = \int_0^1 \left[e^y - (y - 1)\right] dy$$