

On  $[-1, 0]$ :  $y_{\max} = x+1$     On  $[0, 1]$ :  $y_{\max} = -x^2+1$

$y_{\min} = 0$

Q8

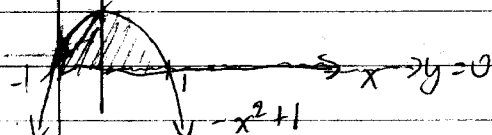
y ↑

$y = x+1$

$x \in [-1, 1]$

$$\int_0^1 f = \int_{x=-1}^{x=0} \left( \int_0^{y=x+1} f(x,y) dy \right) dx + \int_{x=0}^{x=1} \left( \int_0^{y=-x^2+1} f dy \right) dx$$

Split bc the max is different on  $[-1, 0]$  and  $[0, 1]$



$y \in [0, 1]$      $x_{\min} = y-1$   
 $x_{\max} = \sqrt{1-y}$

$$\int_0^1 f = \int_{y=0}^{y=1} \int_{x=y-1}^{x=\sqrt{1-y}} f(x,y) dx dy$$