

Written HW9 – MATH 3503 Fall 2021

**Due by 24 September for timely completion credit**

In this problem, consider the 4-sided figure formed by the points  $A = (-1, 2)$ ,  $B = (2, 1)$ ,  $C = (0, -3)$ , and  $D = (-4, 0)$  with a line segment from  $A$  to  $B$ , from  $B$  to  $C$ , from  $C$  to  $D$ , and from  $D$  to  $A$ .

Let  $R$  denote the interior of the region and recall that  $\text{Area}(R) = \iint_R 1 dA$ .

1. Draw the figure.
2. Find the equations of the four lines that form the boundary of  $R$ . (*recall point-slope form:  $y - y_0 = m(x - x_0)$ , where  $m$  is the slope*)
3. Find the area of  $R$  by computing  $\iint_R 1 dA$ .