

## Quiz 7

Name: \_\_\_\_\_

Let  $D$  be the square region with vertices at  $(0, 1), (1, 0), (-1, 0), (0, -1)$ .

1. Draw  $D$  and write the equations of four boundary lines of  $D$ .

2. Let  $u = x + y$  and  $v = x - y$ . Solve for  $x, y$  in terms of  $u, v$ .

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3. Find the Jacobian  $\frac{\partial(x,y)}{\partial(u,v)}$ .

4. Use this change of variable to evaluate the double integral  $\iint_D (x+y)dA$ .