Written HW6 – MATH 3503 Fall 2020

Due by 2 October for timely completion credit

In these problems, make sure you draw the region (clearly indicate D in your picture) being integrated over, set them up as both $\mathrm{d}y\mathrm{d}x$ and $\mathrm{d}x\mathrm{d}y$-type integrals, and show how you "shoot the arrow". Pick whichever of the two setups that looks easier to you and calculate the numerical value of the integral (just once!!).

1. $\iint_D x \mathrm{d}A$ where D is the region bounded by the curves $x = 1$, $y = 0$, and the curve $y = x$.
2. $\iint_D xy \mathrm{d}A$ where D is the region boudned by the curves $y = x^2$, $x = 1$, $x = 2$, and the curve $y = 4$.