Name: Solutions

Math 208H, Section 1

Quiz number 6

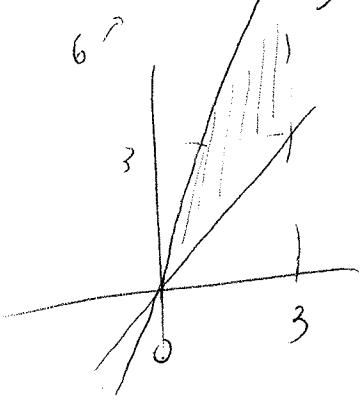
Show all work. How you get your answer is just as important, if not more important, than the answer itself. If you think it, write it!

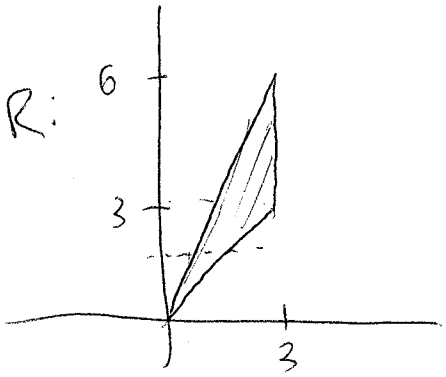
Sketch the region of integration R in the xy-plane expressed by the iterated integral

$$(\not\ast) = \int_0^3 \int_x^{2x} \frac{xy}{x+y}\, dy\, dx$$

and express the double integral as a (sum of) iterated integral(s) written $dx\ dy$.
You do not need to solve either iterated integral!

Between $y=x$ and $y=2x$, for $0 \le x \le 3$:





for $0 \le y \le 3$: from $y=2x$ $(x=\frac{y}{2})$ to $y=x$ $(x=y)$

for $3 \le y \le 6$ from $y=2x$ $(x=\frac{y}{2})$ to $x=3$

$$(\not\ast) = \int_0^3 \int_{y/2}^{y} \frac{xy}{x+y}\, dx\, dy + \int_3^6 \int_{y/2}^{3} \frac{xy}{x+y}\, dx\, dy$$