WolframAlpha™ computational™ knowledge engine

a>=0, b>=0, x>=0,y>= 0,  a<=1,b<=1,x<=1,y<=1,(a/x)^2/((a/x) + (a/y)) > a^2/(a+b)

Input:

$$\left\{a \geq 0, b \geq 0, x \geq 0, y \geq 0, a \leq 1, b \leq 1, x \leq 1, y \leq 1, \frac{\left(\frac{a}{x}\right)^2}{\frac{a}{x}+\frac{a}{y}} > \frac{a^2}{a+b}\right\}$$

Alternate forms:

$$a \geq 0 \;\mid\; b \geq 0 \;\mid\; x \geq 0 \;\mid\; y \geq 0 \;\mid\; a \leq 1 \;\mid\; b \leq 1 \;\mid\; x \leq 1 \;\mid\; y \leq 1 \;\mid\; \frac{a\,y}{x\,(x+y)} > \frac{a^2}{a+b}$$

Solutions:

$$0 < a \leq 1\,, \quad b = a\,, \quad 0 < x < 1\,, \quad -\frac{x^2}{x-2} < y \leq 1$$