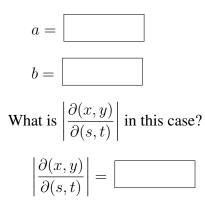Find positive numbers a and b so that the change of variables $s = ax$, $t = by$ transforms the integral

$$\iint_R dx\, dy$$

into

$$\iint_T \left| \frac{\partial(x, y)}{\partial(s, t)} \right| ds\, dt$$

for the region R, the rectangle $0 \leq x \leq 15$, $0 \leq y \leq 10$ and the region T, the square $0 \leq s, t \leq 1$.

$a =$ [____]

$b =$ [____]

What is $\left| \dfrac{\partial(x, y)}{\partial(s, t)} \right|$ in this case?

$\left| \dfrac{\partial(x, y)}{\partial(s, t)} \right| =$ [____]

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$a = \boxed{1/15}$

$b = \boxed{1/10}$

What is $\left| \dfrac{\partial(x,y)}{\partial(s,t)} \right|$ in this case?

$\left| \dfrac{\partial(x,y)}{\partial(s,t)} \right| = \boxed{150}$