a) $\int_1^2 \int_0^2 2xy\,dx\,dy = 6$

$0 \le x \le 2$
$1 \le y \le 2$

$\int_1^2 \frac{2x^2}{2} \cdot y_{dy} \to \int_1^2 x^2 y_{dy}\Big|_0^2 \to \int_1^2 4y_{dy} \to 4\int_1^2 y^2 \to 4\int y \to 4 \cdot \frac{y^2}{2}\Big|_1^2 \to$

$\to 4 \cdot \left(\frac{2^2}{2} - \frac{1^2}{2}\right) = \boxed{4 \cdot \frac{3}{2}}$ //

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b) $\int_0^3 \int_0^2 (5x - y^2)\,dy\,dx = 37$

$0 \le x \le 3$
$0 \le y \le 2$

$\int_0^2 5x\,dx - \int_0^2 y^2\,dy \to \int_0^3 10x\,dx - \int_0^3 \frac{8}{3}\,dx \to 10\int_0^3 x\,dx - \int_0^3 \frac{8}{3}\,dx \to$

$10 \cdot \frac{x^2}{2}\Big|_0^3 - \frac{8}{3}x\Big|_0^3 \to 45 - 8 = 37$ //