Name: ID #: Section #:

(**1**) Evaluate the integral

$$(a) \qquad \int_0^1 \int_0^2 \left(\frac{x}{2} + \sqrt{y}\right) dxdy$$

$$(b) \qquad \iint_R \frac{xy^3}{x^2+1} dA, \qquad R: \quad 0 \le x \le 1, \quad 0 \le y \le 2.$$

(**2**) Sketch the region of integration, reverse the order of integration, and evaluate the integral:

$$\int_0^8 \int_{\sqrt[3]{y}}^2 e^{1+x^4}\, dxdy$$

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$$(b) \qquad \iint_R \frac{x^3 y}{y^2+1} dA, \qquad R: \quad 0 \le x \le 2, \quad 0 \le y \le 1.$$

(**2**) Sketch the region of integration, reverse the order of integration, and evaluate the integral:

$$\int_0^8 \int_{\sqrt[3]{x}}^2 e^{1+y^4}\, dydx$$