- 1. For each of the following,
 - (i) evaluate the iterated integral (when possible one cannot be evaluated as is find it!),
 - (ii) sketch the region in the xy-plane over which you are integrating,
 - (iii) change the order of integration and compute the integral again. Check your answer with that for (a) they should be the same!)

(a)
$$\int_0^2 \int_0^{4-2x} dy dx$$
 (b) $\int_0^1 \int_2^{4-2x} dy dx$ (c) $\int_0^1 \int_x^{\sqrt{x}} dx dy$

2. Compute each of the following integrals, getting your answers in exact form.

(a)
$$\int_{1}^{8} \int_{0}^{2} x^{2} y \, dy \, dx$$
 (b) $\int_{1}^{8} x^{2} \, dx$ (c) $\int_{0}^{2} y \, dy$

3. Find the product of your answers to parts (b) and (c) of Exercise 2. What do you notice about the result? (Write me a brief sentence, or write a concise mathematical statement containing integrals.)