Exercise 1. For each of the following five integrals, either determine the correct order of integration or, if not possible, state that it is impossible to do so.

1. $\int_0^{1-z}\int_0^{y^2} \mathrm{d}A.$

2. $\int_0^{1}\int_{(y-2)/2}^{(2-y)/2} \mathrm{d}A.$

3. $\int_{-3}^{3}\int_0^{\sqrt{9-x^2}}\int_0^{\sqrt{9-x^2-y^2}} z\sqrt{x^2+y^2+z^2}\mathrm{d}V.$

4. $\int_0^{2}\int_0^{x}\int_{z^2}^{6-z} \mathrm{d}V.$

5. $\int_8^{9}\int_0^{x}\int_z^{xy} (xy-yz+x^2)\mathrm{d}V.$

Exercise 2. Consider the triangle with vertices at $(-2,2)$, $(-2,-2)$, and $(2,2)$. Complete the following tasks:

1. Sketch the region represented by this triangle.
2. Derive the equations representing each edge of the triangle.
3. Set up integrals for determining the area of the triangle, using both the orders $\mathrm{d}x\mathrm{d}y$ and $\mathrm{d}y\mathrm{d}x$.