Here are four easy integrals.

1 | **Single Value Function**

$$f_1 : \mathbb{R}^2 \to \mathbb{R}^1 \tag{1}$$
$$f_1(x, y) = 0 \tag{2}$$

What's the area of this function?

We can take the area of the shape, essentially by taking the volume by height 1: that is, for a rectangle of l, w, h, its top-area is simply $l \cdot w$, also known as $lw \cdot 1$. Therefore:

$$\int_0^7 \int_0^5 1dx\ dy = 35 \tag{3}$$

The area of the shape is therefore 35.

2 | **Area of the Plane**

We want to first figure the correction per every given slice $dA = n\ dV$ to setup a surface integral. By pythagoras (i.e. projecting the changes to the parallelity of the surface), we have that:

$$dA = \sqrt{1 + \left(\frac{\partial f}{\partial x}\right)^2 + \left(\frac{\partial f}{\partial y}\right)^2}\ dV \tag{4}$$

What's the area of the following function by $(5, 7)$?

$$f_2 : \mathbb{R}^2 \to \mathbb{R}^1 \tag{5}$$
$$f_2(x, y) = 2x + 3y + 10 \tag{6}$$

What's the area of this function?

$$dA = \sqrt{1 + 4 + 9}dV = \sqrt{14}\ dV \tag{7}$$