Main equations

$$a = \frac{N}{A} \tag{1}$$

The equation $\sigma = ma$ follows easily.

Nomenclature

σ	The total mass of angels per unit area	$\mathrm{kg\,m^{-2}}$
A	The area of the needle point	$\mathrm{m^2}$
a	The number of angels per unit area	$\mathrm{m^{-2}}$
m	The mass of one angel	kg
N	The number of angels per needle point	