Answer on Question 57938, Physics, Mechanics, Relativity

Question:

Calculate the size of the force on a rectangular surface which measures $5\ cm$ by $10\ cm$, if the pressure exerted on this surface is $200\ Pa$.

Solution:

By the definition of the pressure we have:

$$P = \frac{F}{A},$$

here, P is the pressure exerted on the rectangular surface, F is the force acting on the rectangular surface, A is the area of the rectangular surface.

From this formula we can calculate the force acting on the rectangular surface:

$$F = P \cdot A = 200\ \frac{N}{m^2} \cdot (0.05\ m \cdot 0.1\ m) = 200\ \frac{N}{m^2} \cdot 0.005\ m^2 = 1\ N.$$

Answer:

$F = 1\ N.$