

Answer on Question #48095, Physics, Electric Circuits

The ratio of pressure force L to friction force D for an object A in contact with object B is $L/D = 10$. What is the coefficient of friction of A/B?

Solution:

The friction force is the force exerted by a surface as an object moves across it or makes an effort to move across it.

The maximum amount of friction force that a surface can exert upon an object can be calculated using the formula below:

$$F_{frict} = \mu F_{norm}$$

μ is the coefficient of kinetic friction.

The normal force is the support force exerted upon an object that is in contact with another stable object.

$$F_{norm} = W \text{ (weight)}$$

Thus,

$$\mu = \frac{F_{frict}}{W}$$

From given

$$\begin{aligned} F_{frict} &= L \\ W &= D \end{aligned}$$

So,

$$\mu = \frac{D}{L} = \frac{1}{10} = 0.1$$

Answer: $\mu = 0.1$