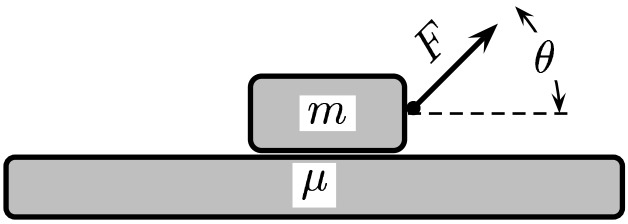
Given: $m = 1$ kg, $\mu_s = 0.7$, $\mu_k = 0.5$, $F_x = 8$ N, $F_y = 6$ N.



Determine the friction force f .

A) $f = F_x = 8\,\text{N}.$

B) $f = \mu_s\,(m\,g - F_y) = (0.7)\,(4\text{ N}) = 2.8\text{ N}.$

C) $f = \mu_k\,m\,g = (0.5)\,(10\text{ N}) = 5\text{ N}.$

D) $f = \mu_k\,(m\,g - F_y) = (0.5)\,(4\text{ N}) = 2\,\text{N}.$

Hint:

$$N = m\,g - F_y = (1\text{ kg})\,(10\text{ m/s}^2)\,(6\text{ N}) = 4\,\text{N}.$$

$$f_s^{max} = \mu_s\,N = (0.7)\,(4\text{ N}) = 2.8\text{ N}.$$

$$f_s = F_x\,,\text{ or } f_k = \mu_k\,N\,.$$

Since $F_x = 8\,\text{N}$, which is stronger than the maximum static friction; *i.e.*, $f_s^{max} = \mu_s\,N = 0.7 \times 4\,\text{N} = 2.8\,\text{N}$, so the block is moving to the right.

The friction force involved is moving to the right. The friction force involved is kinetic friction. Equation $f_k = \mu_k\,N$ and $N = m\,g - F_y\,.$

Answer **D**.

05.08-01˙Pulling˙at˙an˙Angle 2004-3-24