Resultant Force Exerted by Surface on Block.

In the above figure resultant force $S = \sqrt{F^2 + R^2}$

$$S = \sqrt{(\mu mg)^2 + (mg)^2}$$

$$S = mg\sqrt{\mu^2 + 1}$$

When there is no friction $(\mu = 0)$ S will be minimum i.e., $S = mg$

Hence the range of S can be given by, $mg \leq S \leq mg\sqrt{\mu^2 + 1}$