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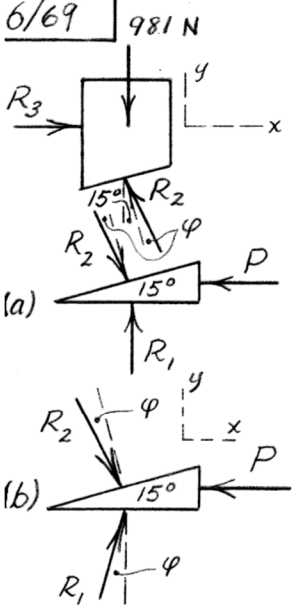

Friction angle $\varphi = \tan^{-1}(0.20) = 11.31°$

(a) Rollers under wedge:

$\Sigma F_y = 0$: $-981 + R_2 \cos(15° + 11.31°) = 0$

$R_2 = 1094$ N

$\Sigma F_x = 0$: $R_2 \sin(15° + 11.31°) - P = 0$

$P = 485$ N

(b) Rollers removed:

Value of R_2 from 100-kg body is unchanged.

$\Sigma F_x = 0$: $R_2 \sin(15° + 11.31°) - P + R_1 \sin(11.31°) = 0$

With R_1 determined from overall equilibrium as $R_1 = 981/\cos 11.31° = 1000$ N, we solve for P as

$P = 681$ N