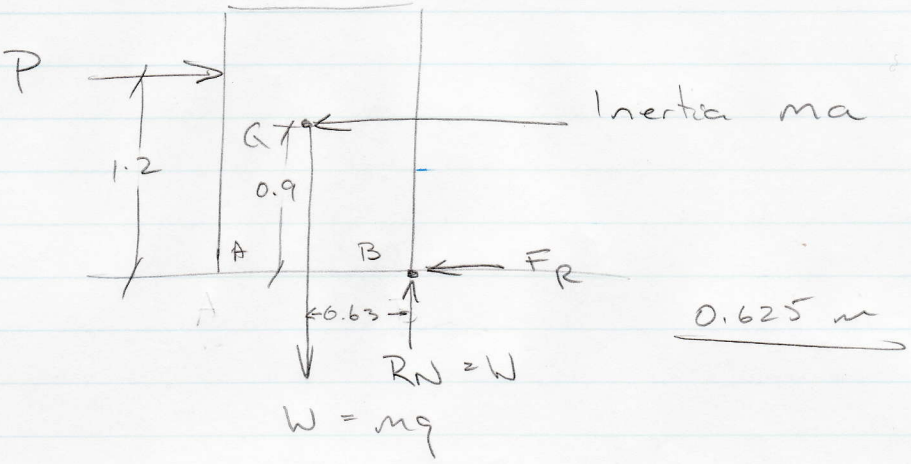
16

Find max accelerating heto< tipping



At onset of tipping over R_N moves to B

$\rightarrow \quad \leftarrow$

$F = F$, $P = ma + F_R$

$= 45a + \mu R_N$

$= 45a + 0.2 \times 45 \times 9.81$ (1)

Taking moments about B

$\curvearrowright = \curvearrowleft$

F_R + R_N are disposed.

$P \times 1.2 = (W \times 0.625) + (ma \times 0.9)$

$1.2P = (45 \times 9.81 \times 0.625) + (45a \times 0.9)$ (2)

resolve simultaneous equations

(1)

$1.2(45a + 88.29) = 275.91 + 40.5a$

$13.5a = 169.96$

$a = 12.59 \ m/s^2$