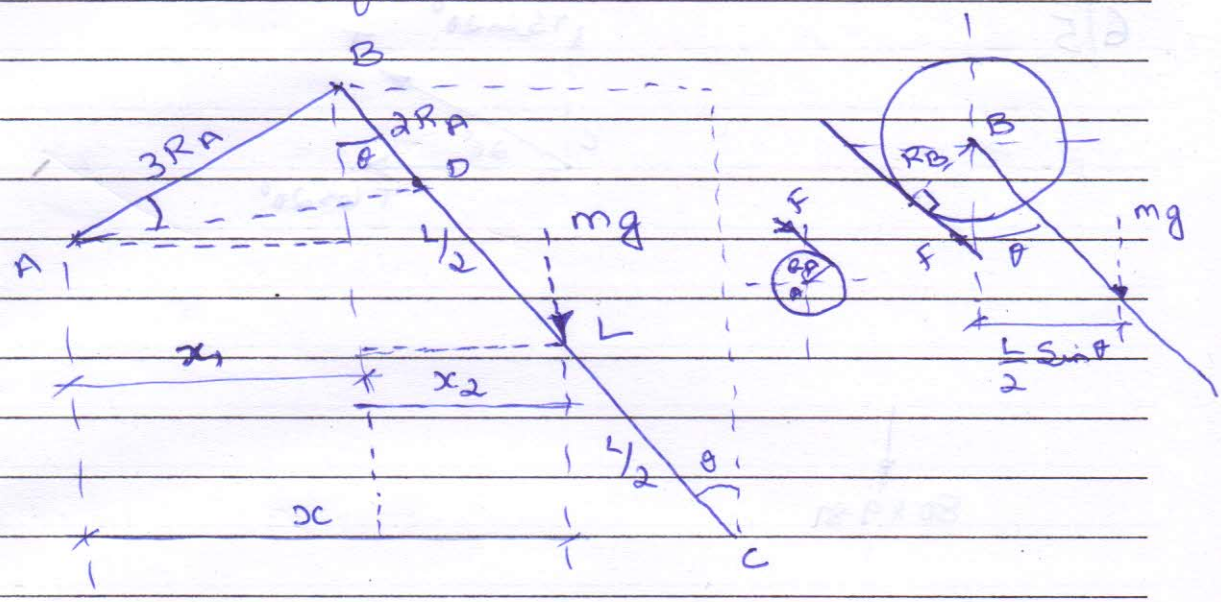
DATE

Equilibrium

3/25



Given, Data

$2R_A = R_B$

To find

$M_A = ?$

Solution

$M_A = mg \times x$

$x = x_1 + x_2$

$M_B = mg \times x_2$

$= mg \times \frac{L}{2} \sin\theta$

$M_B = F \times R_B$

$F = \frac{M_B}{R_B} = \frac{mgL\sin\theta}{2R_B}$

$M_A = -F \times R_A$

$= -\frac{mgL\sin\theta}{2R_B} \times R_A$

$= -\frac{mgL\sin\theta \times R_A}{2 \times 2R_A}$

$= -\frac{mgL\sin\theta}{4}$

$= \frac{mgL\sin\theta}{4}$ CW

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