

P12 - 4.3 - Torque Force Notes

A 280 kg tower is suspended on 880 kg bridge. Find the Force on each Pillar.

C=CC

$\tau_{cc} = \tau_c + \tau_c$
 $F_1 d = F_{\parallel} d + F_{\parallel} d$
 $F_1(8) = 8624(4) + 2744(3)$
 $F_1 = 5341 \text{ N}$

The pivot force is not considered in this calculation

$F_g = mg$
 $F_g = 880(9.8)$
 $F_g = 8624 \text{ N}$

$F_g = mg$
 $F_g = 280(9.8)$
 $F_g = 2744 \text{ N}$

Up=Down

$F_1 + F_2 = F_g + F_g$
 $5341 + F_2 = 8624 + 2744$
 $F_2 = 6027 \text{ N}$

A 2800 kg tower is suspended on 8800 kg bridge. Find the Force on each Pillar.

C=CC

$\tau_{cc} = \tau_c + \tau_c$
 $F_2 d_1 = F_{\parallel} g + F_{\parallel} g$
 $F_2(1) = 8624(4) + 2744(3)$
 $F_2 = 53704 \text{ N}$

$F_g = mg$
 $F_g = 880(9.8)$
 $F_g = 8624 \text{ N}$

$F_g = mg$
 $F_g = 280(9.8)$
 $F_g = 2744 \text{ N}$

Up=Down

$F_1 + F_2 = F_g + F_g$
 $F_1 + 53704 = 8624 + 2744$
 $F_1 = 6027 \text{ N}$