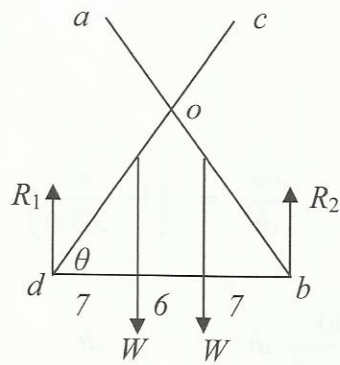


7 (a)



Lengths in ratio : $7x, 13x, 20x$

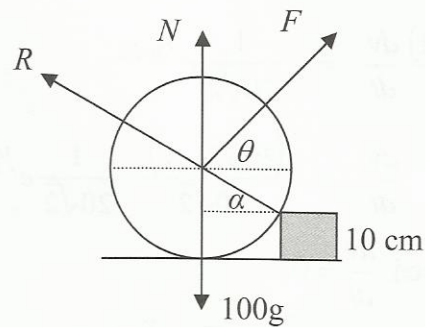
Take moments about b for system :

$$R_1(20x) = W(13x) + W(7x)$$

$$R_1 = W$$

5	
5	
5	15

7 (b)



$$F \cos \theta (0.15) + F \sin \theta (0.20) = 100g (0.20)$$

$$F(0.6)(0.15) + F(0.8)(0.20) = 100g(0.20)$$

$$F = 80g \text{ or } 784 \text{ N}$$

5	
5,5	
5	
5	25