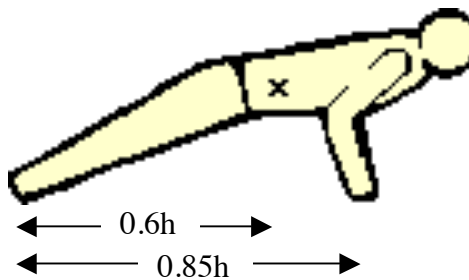




1. A 68.0kg tightrope walker walks along a rope that is held up by supports that are 9.00m apart. When he is one-third of the way along the rope, it sags 30.0cm. Find the tension in the rope on each side of the tightrope walker.

2. A 50.0kg athlete about to do a push-up lies horizontally with only her hands and toes touching the ground. Her center of mass is 60% of the way from her toes to her head and her hands are 85% of the way. Find (a) the force that ground exerts on her hands and (b) the force that her hands must exert on the ground.



3. In the strange photo at the right, the diver has a mass of 75.0kg and the tub has a mass of 120kg and is 2.00m long. The tub's feet are 40.0cm from each end. Find the force the floor exerts on the right foot and on the left foot of the tub.

4. The slope of a pitcher's mound makes a 20.0° angle with the horizontal. A 15.0N – 90.0cm baseball bat rests on the mound in such a way that only the ends are actually in contact with the mound. The center of mass of the bat is 60.0cm from the skinny end. Find the magnitudes of each of the normal forces and the total frictional force that the ground exerts on the bat.

