Answer on Question #69298-Physics-Other

The wheelbarrow is an example of a second class lever. The fulcrum of a 19.6 kg wheelbarrow is located at the wheel. The wheelbarrow holds 47.4 kg of rocks and the center of mass of the wheelbarrow+rocks is 0.30 meters from the wheel. The upward force a person must exert at the end of the handles which are 0.6 m from the wheel in order to just lift the handles off the ground is ____ N.

Solution

The equilibrium will be when

$$FD = (M + m)gd$$

$$F = \frac{(M + m)gd}{D} = \frac{(47.4 + 19.6)(9.81)0.30}{0.6} = 329\ N.$$

Answer: $329\ N$.

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