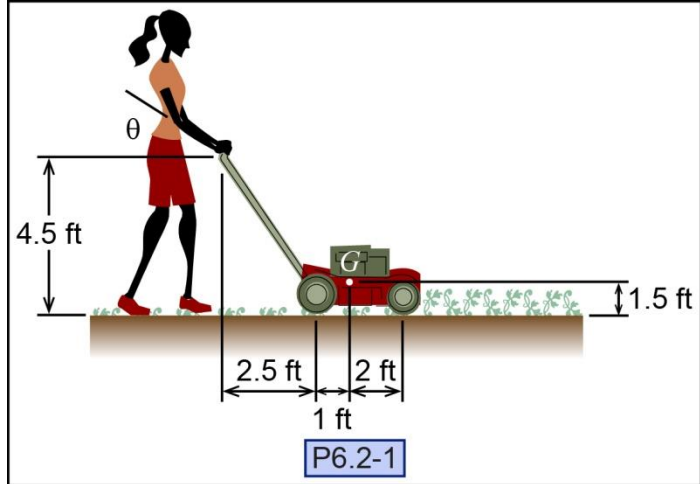


P6.2-1) A woman pushes a 60-lb lawn mower with a force of P in the direction shown in the figure ($\theta = 51^\circ$). Determine the maximum acceleration that the lawn mower can attain before the front wheel lifts off the ground and the associated value of P . The rolling resistance between the tires and the grass is $R_r = f_r W$, where $f_r = 0.1$ and W is the weight of the lawn mower.

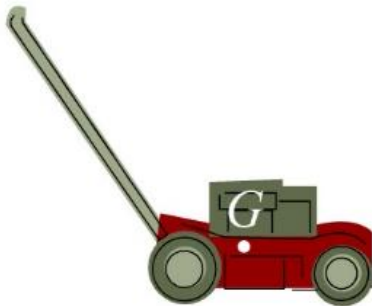


Given:

Find:

Solution:

Draw a free-body diagram of the mower.



When the mower begins to tip about the rear wheel, which forces in your FBD go to zero?

Find the mower's acceleration and the pushing force.

Write down the two mower equations of motion that will help us find the unknowns.

$a =$ _____

$P =$ _____