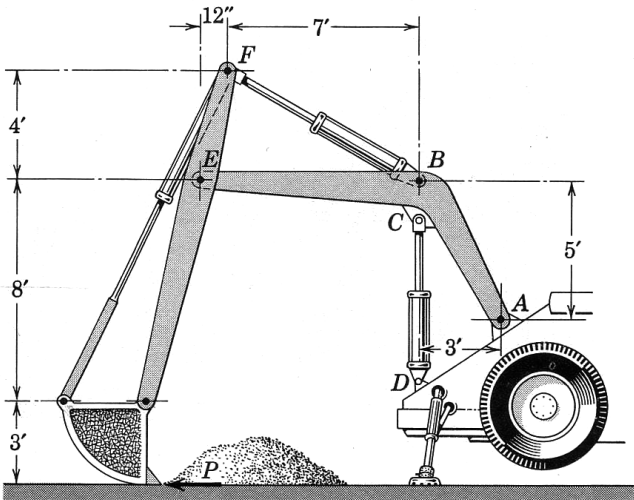


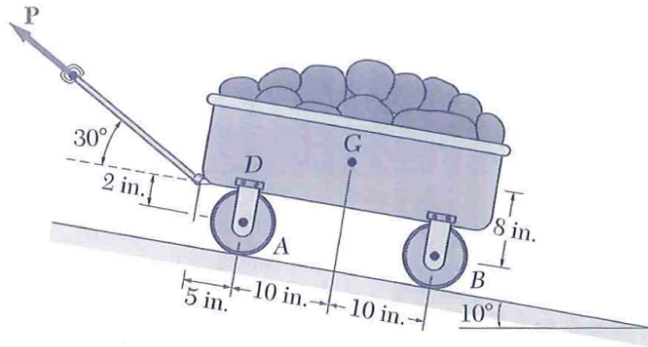
**Problem 1**

- (a) Determine the force in cylinder  $FB$  required to develop a scooping force  $P = 2000$  lb.
- (b) Find the corresponding force acting on member  $EF$  at pin  $E$ .



**Problem 2**

A child pulls a wagon up a  $10^\circ$  slope at constant speed. The combined weight of the wagon and load is 50 lb, acting at G. Determine the pull P that the child exerts on the handles and the forces acting on each of the four wheels.



**Problem 3**

A dump truck designed to carry grain is shown. The dump bed is actuated by a hydraulic cylinder  $AB$ . If the combined weight of the dump bed plus the load is 8000 lb, and the bed is at the position shown, determine the forces acting on the bed at  $B$  and  $C$  necessary for equilibrium.

