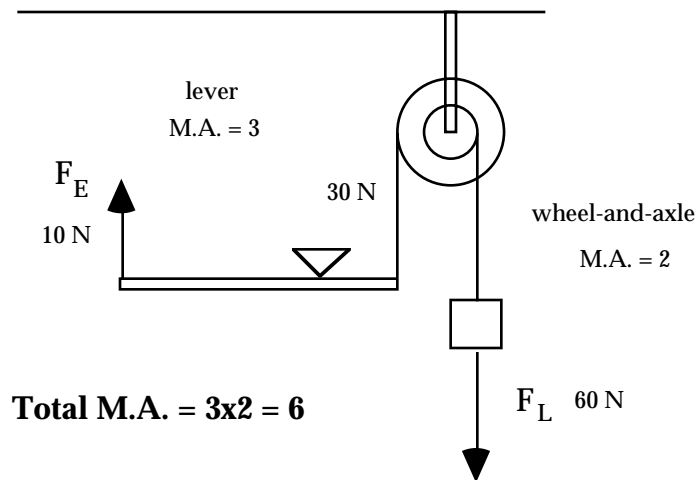


Compound Machines : Notes/W.S.-110

A **compound machine** is a machine that contains several simple machines. Most machines that we use are compound machines.

The bicycle is an example of a compound machine. It uses levers and wheel-and-axles.

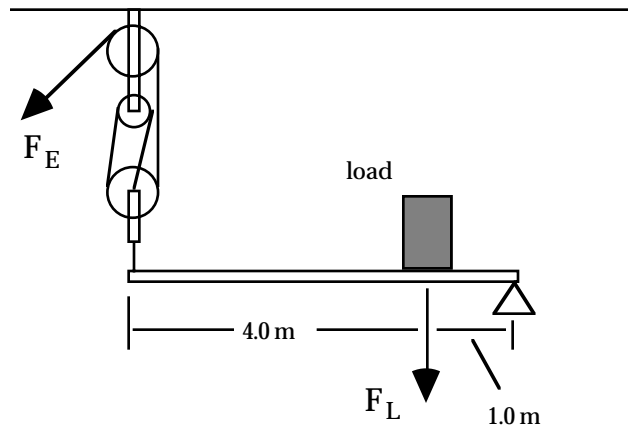
Example: The following compound machine uses two simple machines; the lever, and the wheel-and-axle.



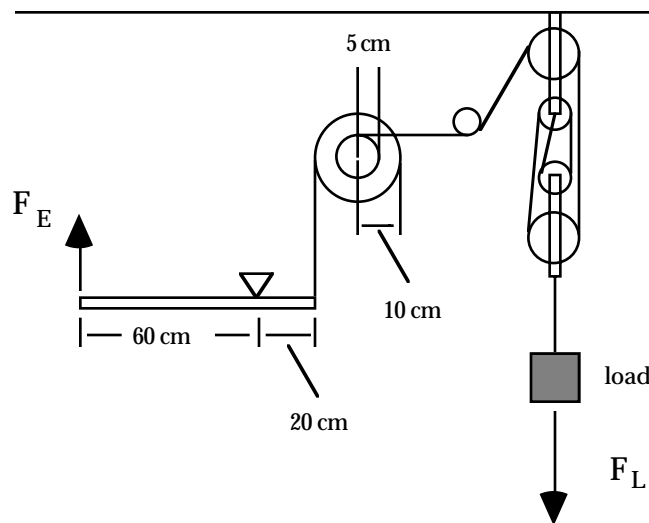
In general, the mechanical advantage of a compound machine equals the product of the mechanical advantages of the simple machines that it contains.

Problems:

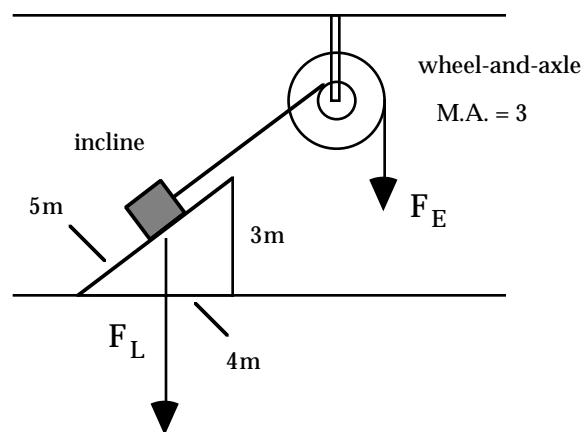
- 1) What is a compound machine?
- 2) A compound machine contains three simple machines with mechanical advantages of 2, 4, and 5, respectively. What is the overall mechanical advantage?
- 3) Find the M.A. for the compound machine shown below.



4) Find the M.A. for the compound machine shown below.



5) Find the M.A. for the system shown below.



Answers: 1) A **compound machine** is a machine that contains several simple machines., 2) 40 (2x4x5), 3) 15 (3x5), 4) 24 (3x2x4), 5) 5 (5/3x3).