Section 7-3

Simple Machines

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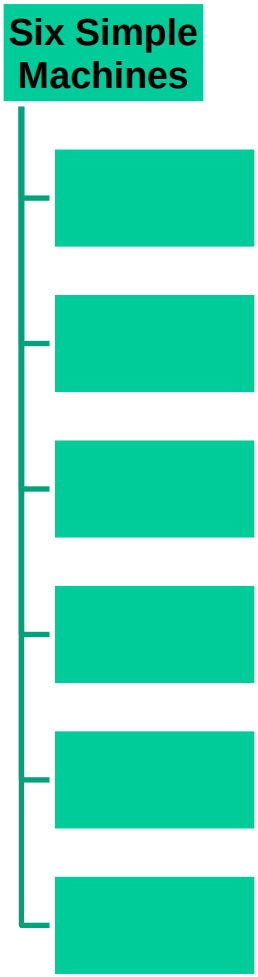

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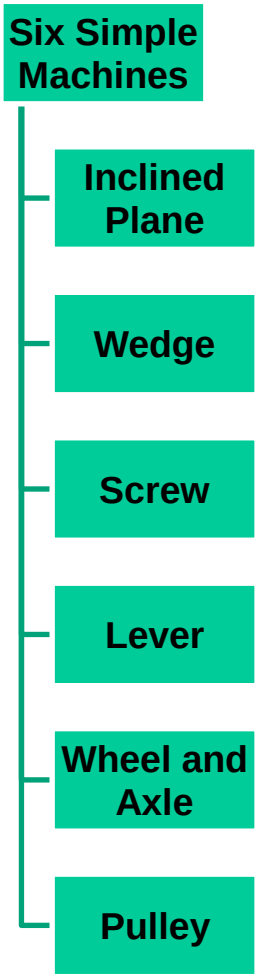

How do you calculate the mechanical advantage of an inclined plane?

$$ideal\ mechanical\ advantage = \frac{length\ of\ incline}{height\ of\ incline}$$

What is a wedge?

What is a screw?

How would you calculate the mechanical advantage of a wedge and a screw?

$$ideal\ mechanical\ advantage = \frac{length\ of\ incline}{height\ of\ incline}$$

Three class of levers; what are they?

1. First class
2. Second class
3. Third class

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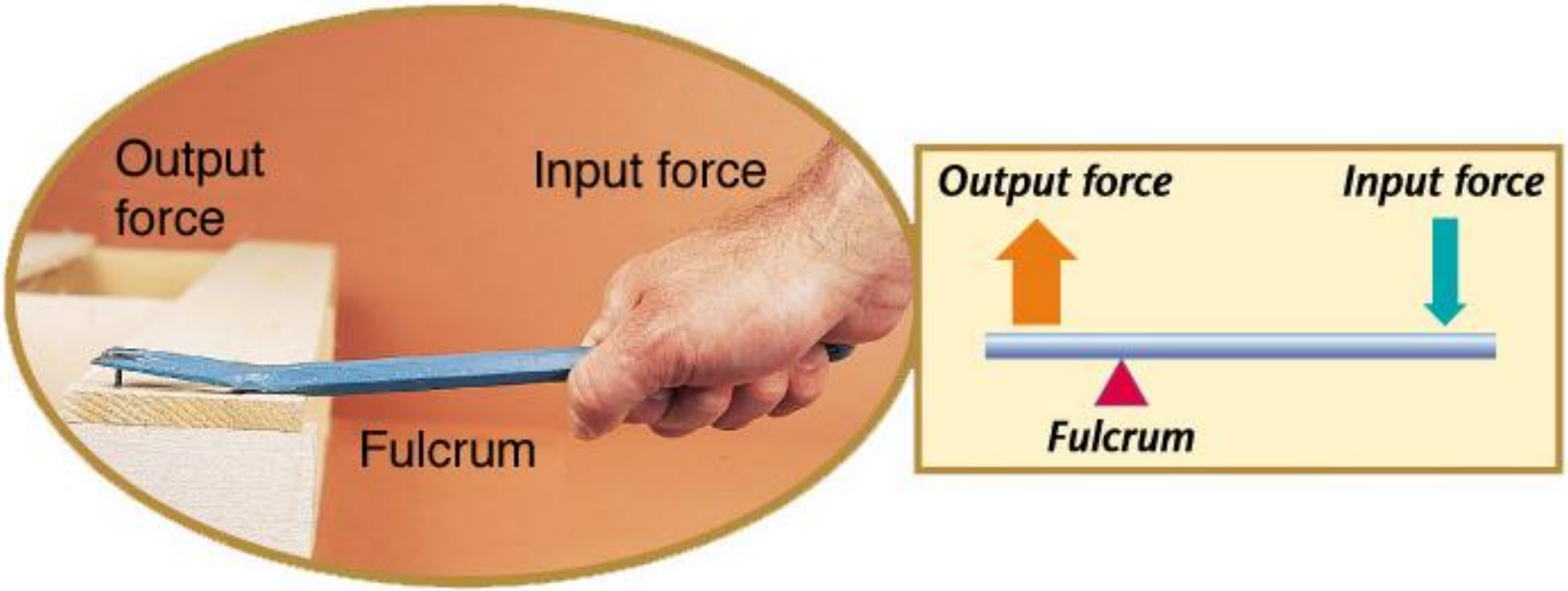
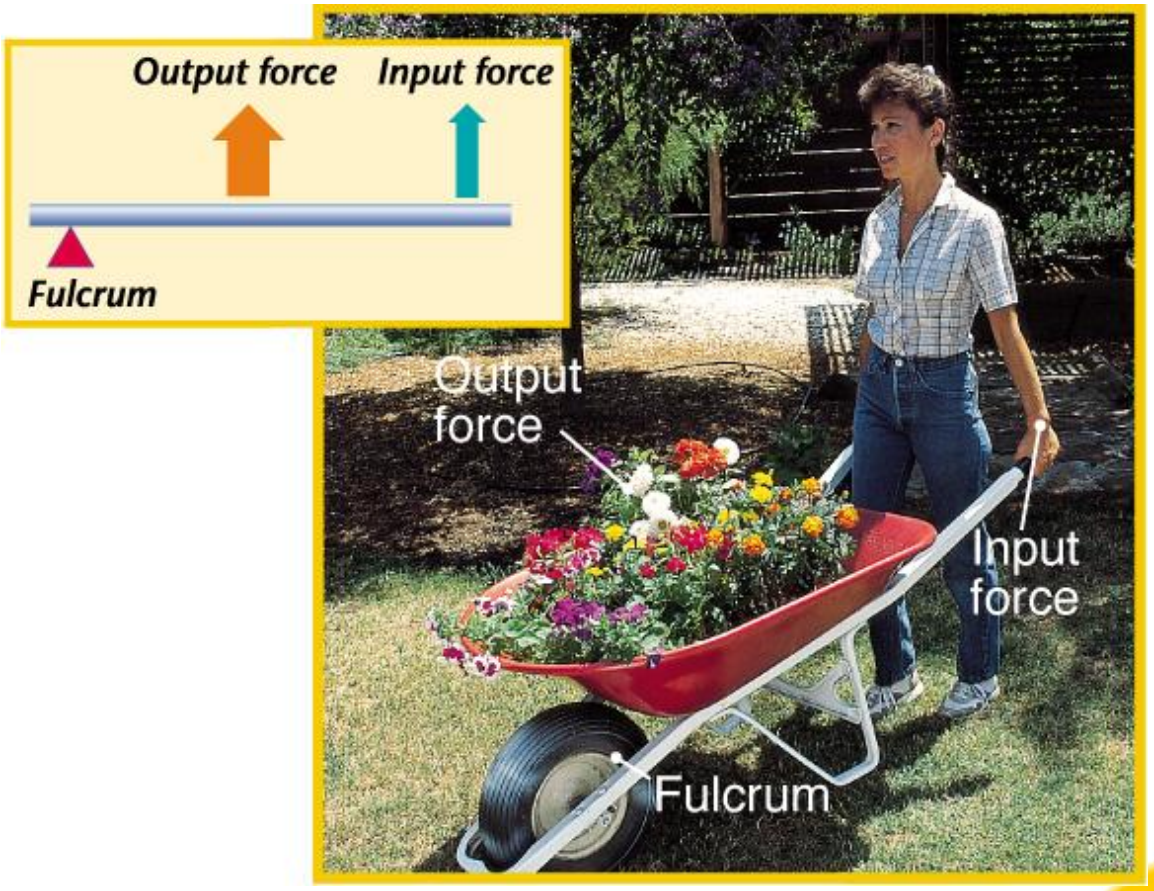
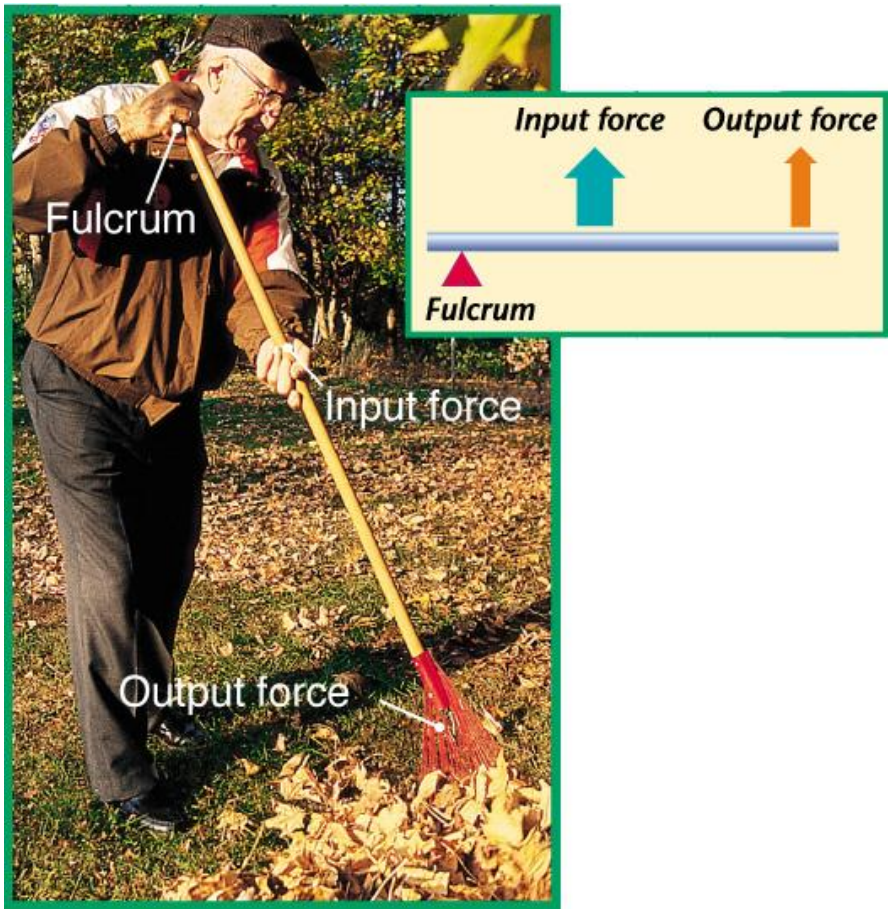
First Class Levers



Second Class Levers



Third Class Levers



How do you calculate the mechanical advantage of a lever?

$$Ideal\ MA = \frac{Distance\ from\ fulcrum\ to\ input\ force}{Distance\ from\ fulcrum\ to\ output\ force}$$

What is a wheel and axle?

How do you calculate the mechanical advantage of a wheel and axle?

$$Ideal\ MA = \frac{Radius\ of\ wheel}{Radius\ of\ axle}$$

How do you calculate the mechanical advantage of a pulley?

The ideal mechanical advantage of a pulley system is equal to the number of sections of rope that support the object. (*Don't include the rope on which you pull downward, because it does not support the object*.)

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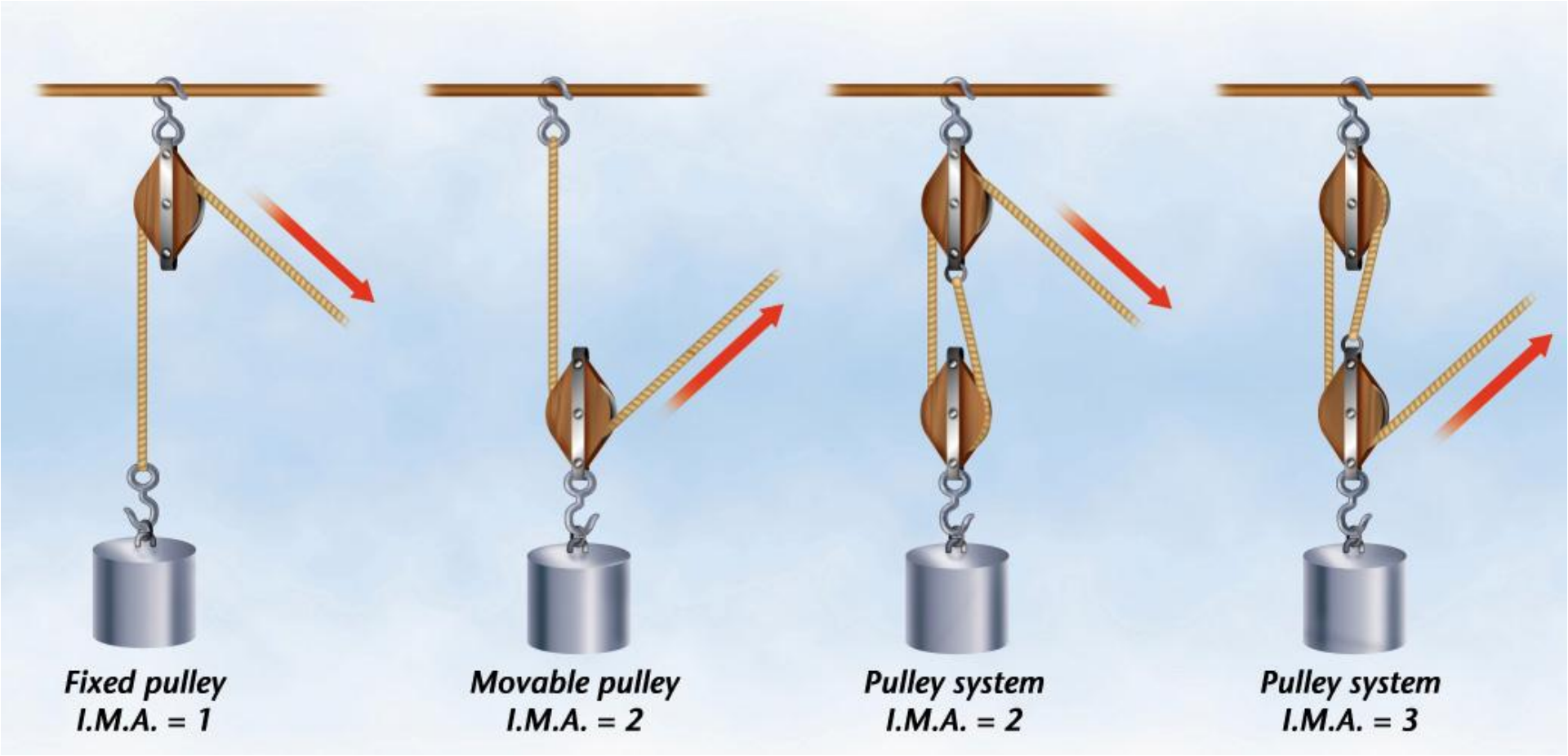

Simple Machines

Simple Machine	Mechanical Advantage	Example
Lever	Distance from fulcrum to input force ÷ distance from fulcrum to output force	Seesaw
Inclined Plane	Length of incline ÷Height of incline	Ramp
Pulley	Number of sections of rope supporting a load	Flagpole

Levers in the human body:

Most of the machines in your body are levers that consist of bones and muscles.

Tendons and muscles pull on bones, making them work as levers.

Wedges in the human body:

Your incisors are shaped like wedges.