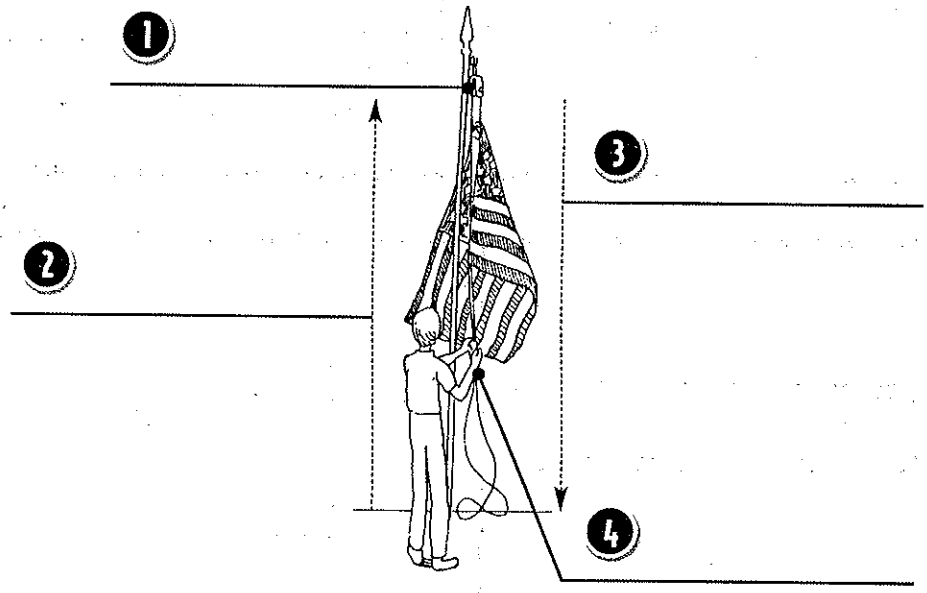
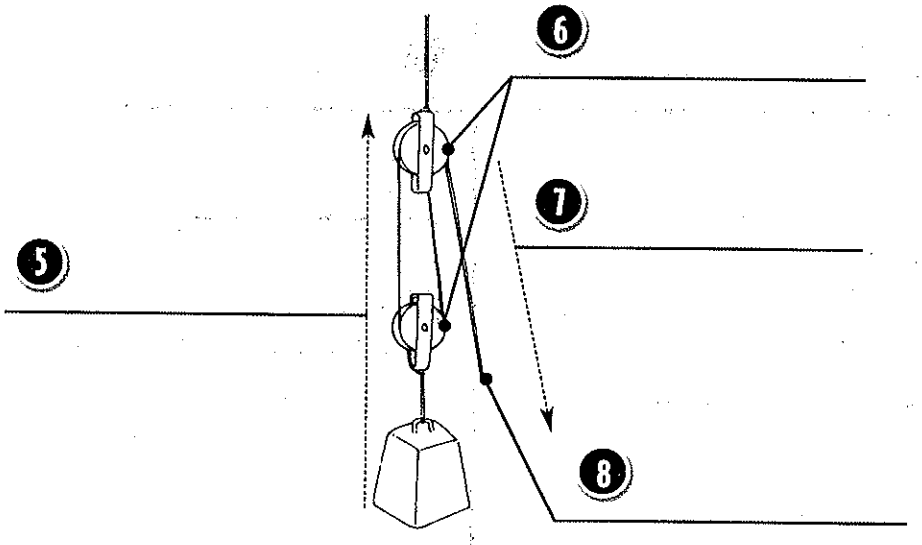
Name _____ Date _____

Pulleys

A **pulley** is a small wheel with a grooved rim that holds a rope or chain. Pulleys can be fixed or movable. Each pulley or wrap of the line allows you to trade distance for force. Use the terms in the word box to label the illustrations.

distance to move load	distance you use	force	pulley





Distance used is two times more than distance moved.

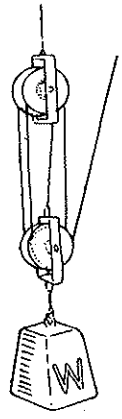
Name _____ Date _____

Mechanical Advantage of Pulleys, Wheels, and Axles

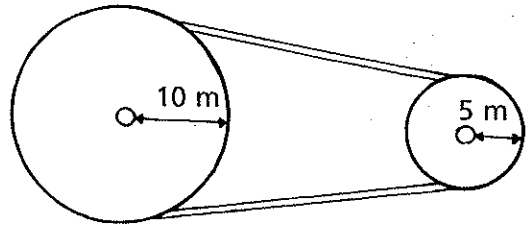
Pulleys create mechanical advantage. Wheels and axles work together to create mechanical advantage. Gears are a type of wheel and axle. Use the formula to calculate the mechanical advantage for each diagram.

Mechanical advantage for pulleys: When the length of line you pull on is equal in length to the distance you move the load, the mechanical advantage (ma) is 1. Each time you add another length to the distance you must pull, by adding another wrap around a pulley, the mechanical advantage increases by 1 more.

Mechanical advantage for wheels and axles:
MA = radius of the wheel / radius of the axle



1 _____



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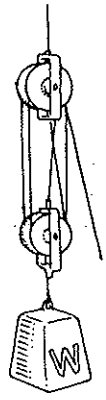

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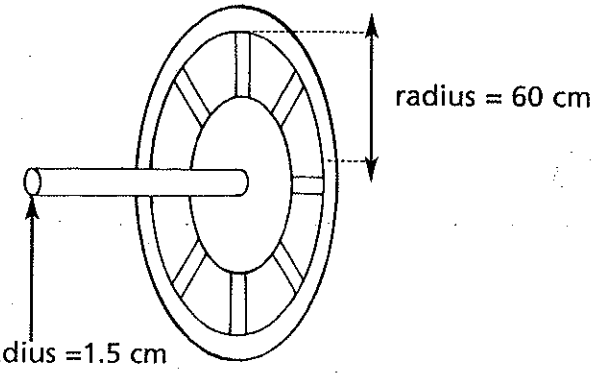

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