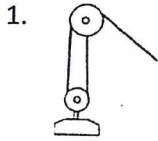


Pulley: consists of a wheel and string, changes the direction of force applied

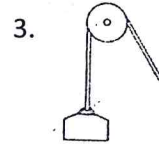
Examples: elevator, flag pole, clothesline

Mechanical Advantage Calculation for Pulleys: number of ropes that exert an upwards force on the load

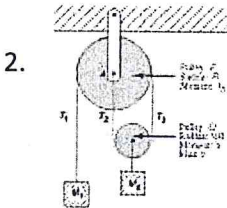
Practice Problems with Pulleys:



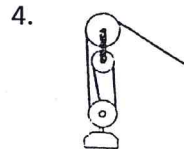
MA = 2



MA = 1



MA = 2



MA = 3

Wheel and Axle: a wheel connecting with an axle moving together when a force is applied

Examples: Bike, car

Mechanical Advantage Calculation for Wheel and Axle: radius wheel / radius axle

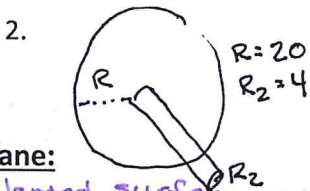
Practice Problems with Wheel and Axles:



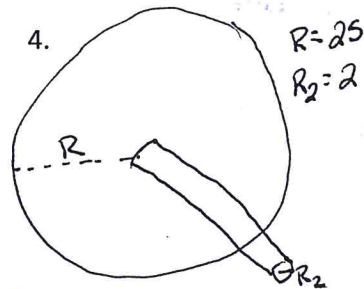
MA = 10/2 = 5



MA = 5/3 = 1.6



MA = 20/4 = 5



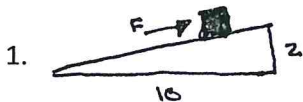
MA = 25/2 = 12.5

Inclined Plane: slanted surface used to raise an object

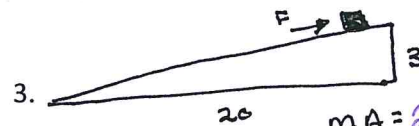
Examples: ramp

Mechanical Advantage Calculation for Inclined Planes: length / height

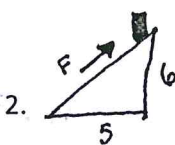
Practice Problems with Inclined Planes:



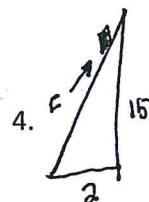
MA = 10/2 = 5



MA = 20/3 = 6.6



MA = 5/6 = 0.83



MA = 2/15 = 0.13

Compound Machine: two or more simple machines put together

Examples -

Bike (wheel + axle, pedals = levers, chain = pulley)
Wheel Barrow (lever, wheel + axle)

When it comes to incline planes... larger the MA = easier to move something up it!