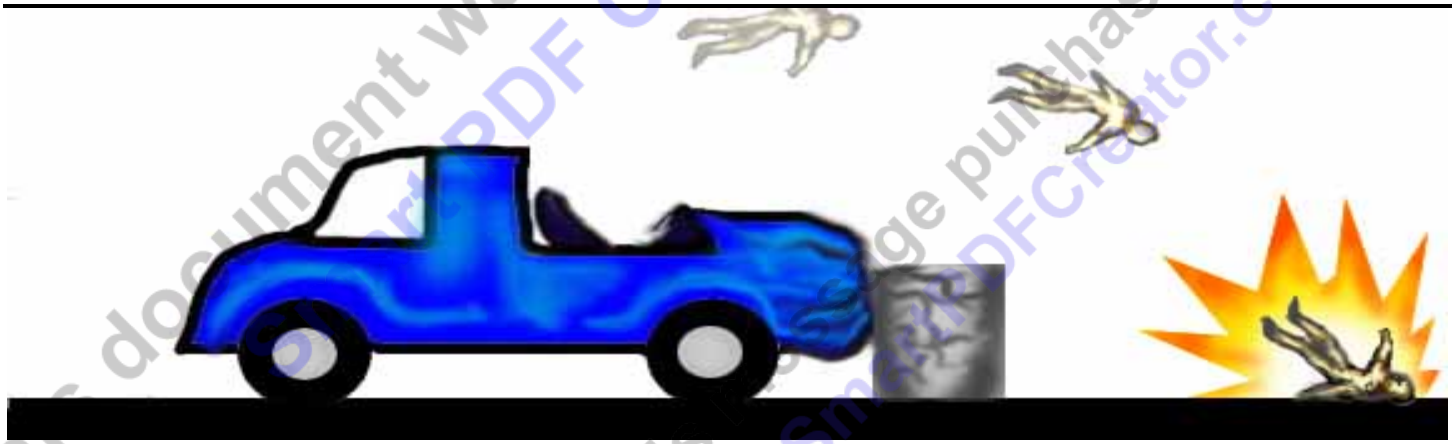
MOTIONOFE

(Opportunity for Excellence)

Name:

Due:

Please explain how the picture below represents Newton's First Law of Motion. Why should you always wear a seatbelt?



Describe how the images below relate to Newton's First Law

Please draw what will happen to a car driving too fast in the sharp curve below. Explain the forces at work.

Please label the picture with correct type of friction below.

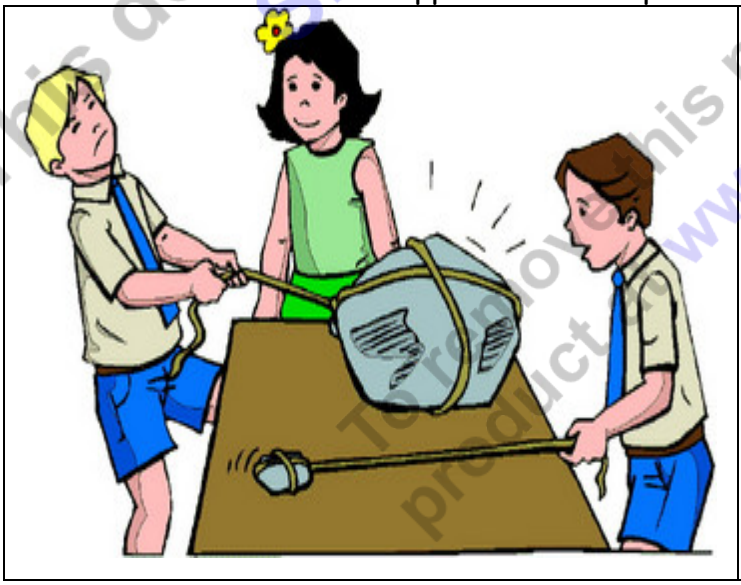
			

Describe the Positives and Negatives of Friction Below

\+ −

Please describe Newton's 3rd Law using the visual below in a short paragraph of at least 25 words.

Which of Newton's Law's applies here? Explain using the space on the right.



F____ = _____ _____

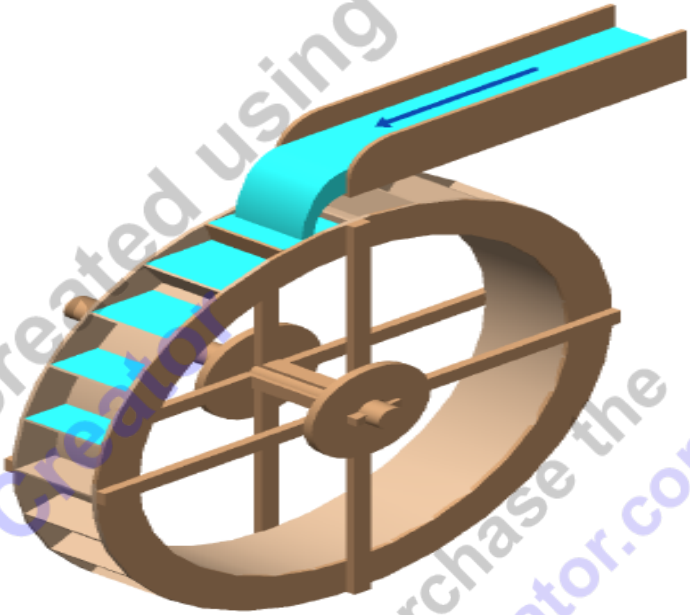
Please discuss how Newton's Third Law applies to the picture below. Both vehicles were traveling at the same speed.

Please provide a visual that demonstrates each of Newton's three Laws

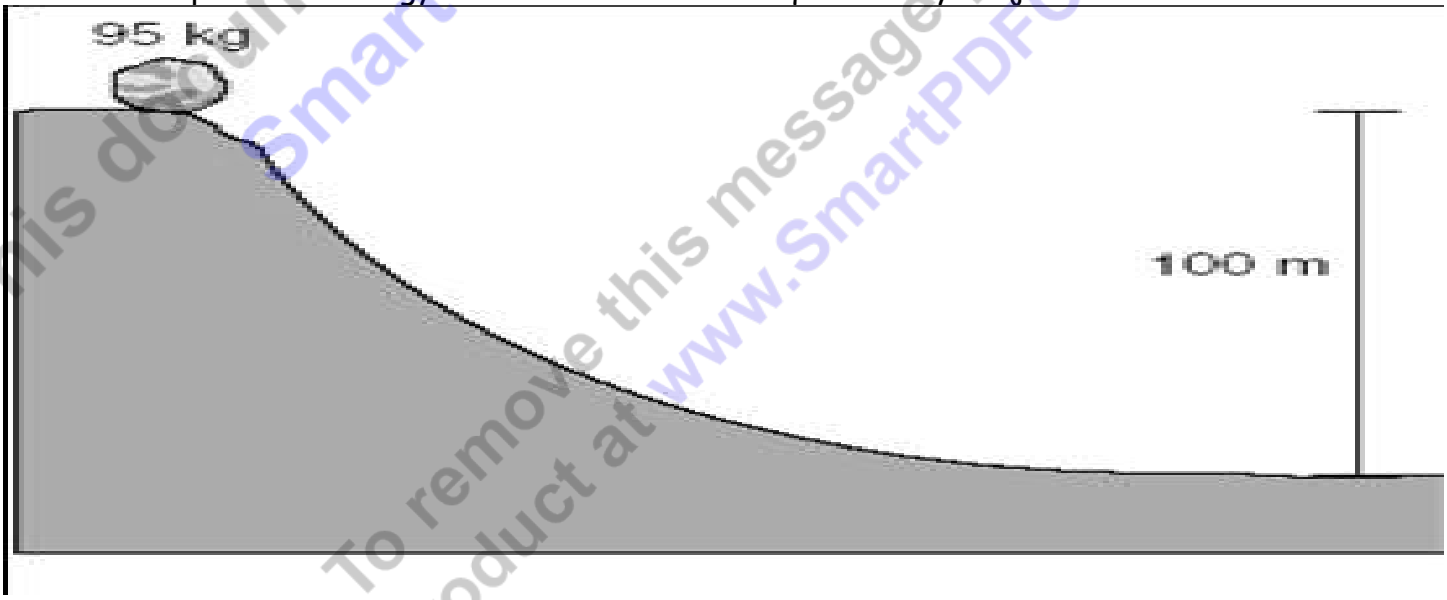
1st	2nd	3rd

Please describe potential and kinetic energy using the half pipe below. Please create your own skater. A ball will work for those who don't skate.

Please describe how potential energy can be turned into kinetic energy using the picture below.

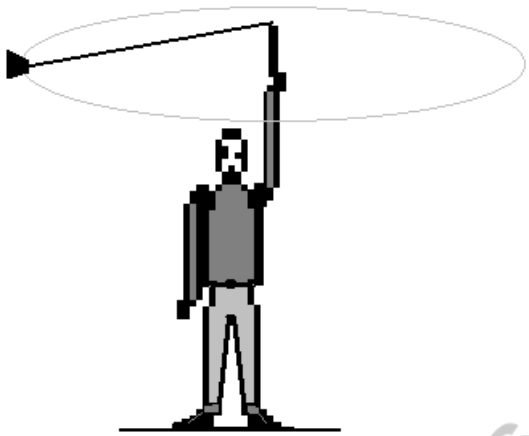


What is the potential energy of the rock? Use the equation in your journal. Answer is in Joules.



Please label each letter in the equation

KE = _____ _____ _____

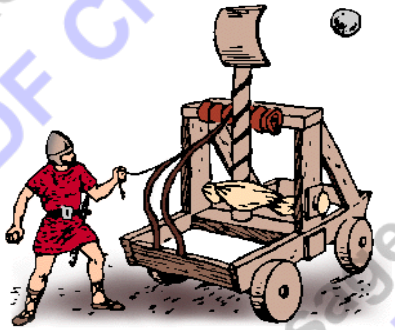
What force can be seen below?	What is the speed of a car that takes two hours to drive 80 miles? How about 80 km in one hour?
	

Calculate the following if the height of a ramp for a Hotwheels track was 5 meters , the length of the track was 20 meters pointing North, the time from start to finish was 8 seconds, and the weight of the car was 50 grams. Please show the formula and work for each of the boxes below. Please make sure to use the correct unit such as Joules, Newton's, etc.

Potential Energy (PE)	Kinetic Energy (KE)	Mechanical Energy (ME)	Force
_____	_____	_____	_____
Speed	**Velocity**	**Momentum**	**Work**
_____	_____	_____	_____

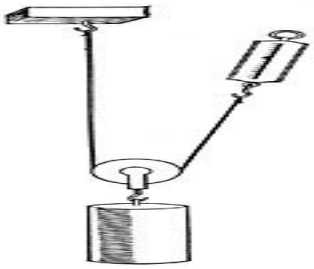
If a car traveling at a velocity of 80 km/h/South accelerated to a velocity of 100 km/hr/South in 5 seconds, what is the cars acceleration?	The same car traveling 100 km/hr/ South decelerates to a velocity of 40 km/hr/South. What is the cars deceleration?

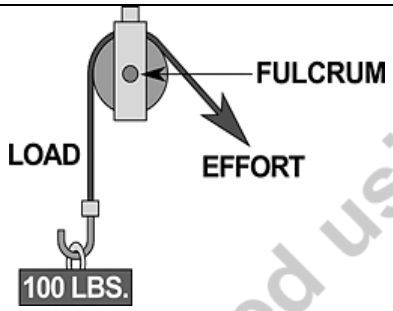
What can you tell me about the picture below? Include Newton's Laws of Motion + Potential and Kinetic Energy.

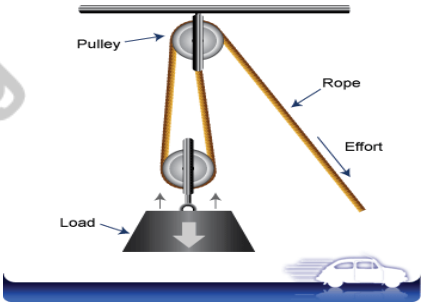


What does this machine do? If you don't know, than please list all of the possibilities.
What do all machines do?

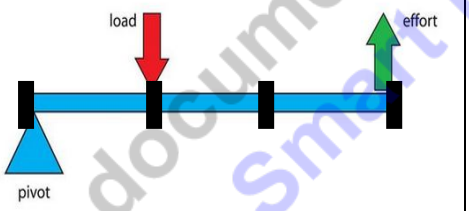
Please provide the name of the correct pulley in the boxes below. Also provide each pulley's Mechanical Advantage.

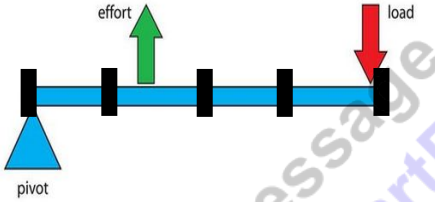


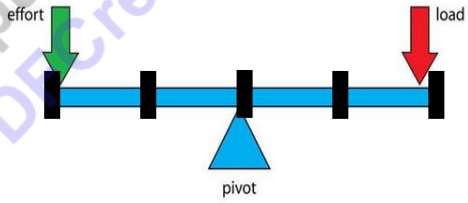




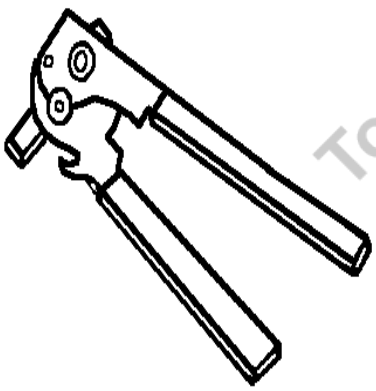
Please provide the name of the correct class of lever in the boxes below. Also find the Mechanical advantage of each lever by measuring the pictures below. Each space is one meter.

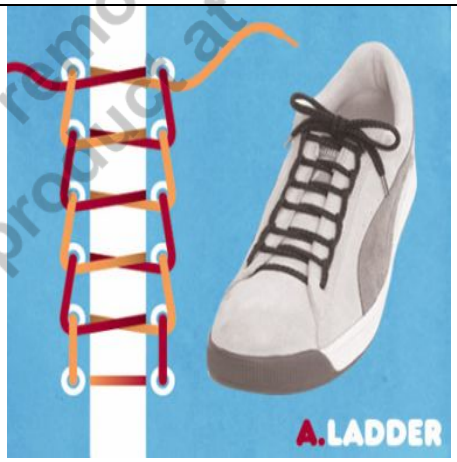


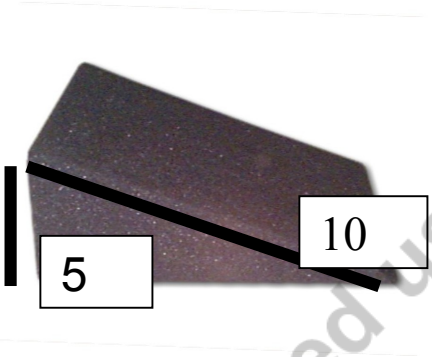


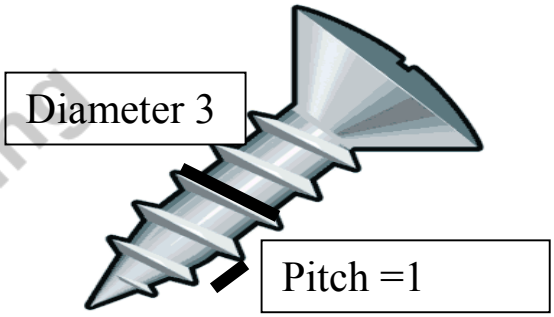


Please label the machines below. There can be more than one answer per square. Also find the MA where information is given.









Please label all of the simple machines in the picture below. You must draw arrows to them as you describe them. A strong answer will show more than 10.

Sketch out a Rube Goldberg machine that makes a simple task very complex. Your machine must include all of the simple machines we have learned.

◊Wheel and Axle ◊Wedge ◊Inclined Plane ◊Pulley ◊Screw ◊Lever