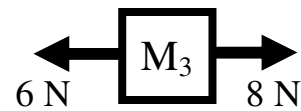
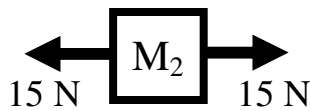
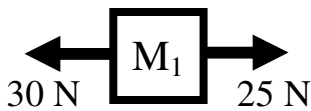
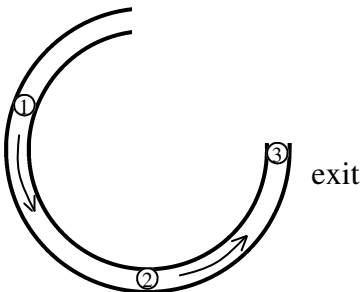


You will need these notes: "Forces and Newton's First Law" and "Types of Forces";

- For each of the following pairs of objects, which one has more inertia?
 - * A freight train or a car?
 - A ping pong ball or a baseball?
 - * A fast bowling ball or a slow bowling ball?
 - A 20 kg mass or a 10 kg mass?
 - A rock on the earth or a rock in space?
 - A fast baseball or a bowling ball at rest?
- Identify the following forces as F (applied), T, F_w (weight), F_f (friction), or F_N .
 - ____ Due to a string.
 - ____ Opposes weight for objects on surfaces.
 - ____ You push down on an object on a table, this increase.
 - ____ Caused by gravity.
 - ____ Would decrease on the moon.
 - ____ Decreases if a surface is smooth.
 - ____ You place a heavy object onto a board. The board will break if this is too small.
 - ____ Always vertical.
 - ____ If a surface is tilted, this changes direction, too.
 - ____ Has the units of newtons.
 - ____ Doesn't exist for hanging objects.
- While a force is acting on an object, give three things that can happen (*top of "Newton's First Law" notes*).



- *Calculate the net force on M_1 .
 - Calculate the net force on M_2 .
 - Calculate the net force on M_3 .
- Which of the above masses: M_1 , M_2 , or M_3 ?
 - ____ Which could be at rest?
 - ____ Acceleration is negative.
 - ____ Acceleration is positive.
 - ____ Has a net force of 0 N.
 - ____ Has a net force ($F_{net} \neq 0$)
 - ____ Has balanced forces.
 - ____ Could be changing direction.
 - ____ Has unbalanced forces.
 - ____ Could be a constant speed.
 - ____ Could be slowing down to the left.



- A ball is moving inside a tube, as shown on the diagram at the left.
 - When it leaves the tube, will it have a circular path or a straight path?
 - What do we call any force that keeps an object moving in a circular path?
 - At point 1, draw an arrow to show the direction of the velocity of the object. Label it "v".
 - At point 2, draw an arrow (labeled "a") showing its acceleration.

- Static or kinetic friction?
 - ____ Slipping friction.
 - ____ Gripping friction.
 - ____ Depends on the surface's roughness
 - ____ Acts to keep an object from sliding.
 - ____ Tries to stop an object that is already sliding.
 - ____ Depends on weight of the object, if on a surface.

1A) Train (more mass) 1C) same (same mass) 4) $-30+25 = -5\text{ N}$ or 5 N left