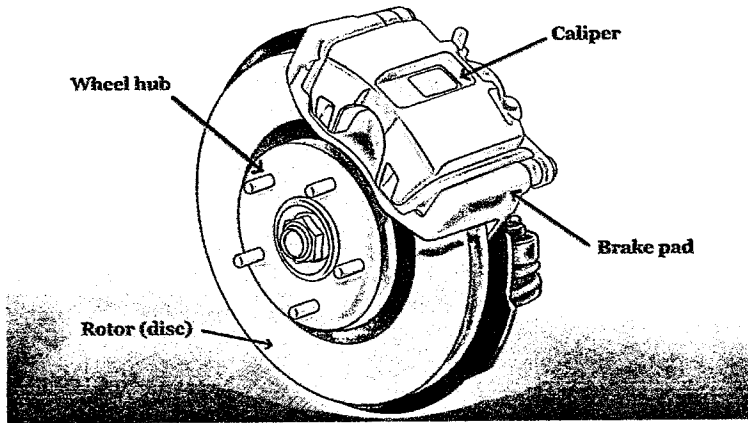


Name: \_\_\_\_\_ Date \_\_\_\_\_

## Welcome 2018 - Review

Directions - Circle the best answer for each question

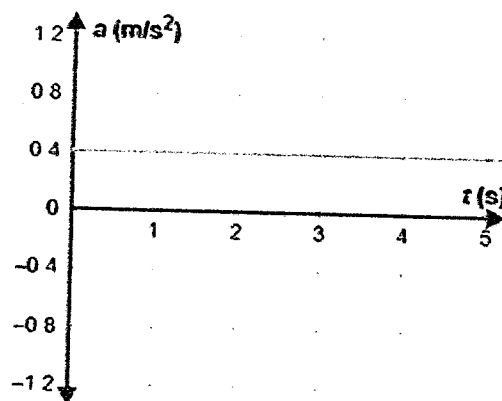
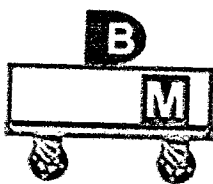
- 1.) A new car company wants to improve the performance of their disk brakes. Disc brakes work by applying pressure from the brake pads in the caliper to the rotor (disc) to create friction that slows the car down.



What is a way the car company should explore to increase friction between the rotor and brake pad?

- A. Make the rotor and brake pads as smooth as possible.
- B. Engineer microscopic ridges into the rotors and pads that increase roughness between the two.
- C. Engineer a way to spray oil onto the brake pads and rotors so they can slide easier.
- D. Decrease the pressure that the caliper applies to push the brake pad onto the rotor.

2.) The acceleration of the cart shown below is represented in the given graph. If a second block is added to the cart, what might be the resulting acceleration?

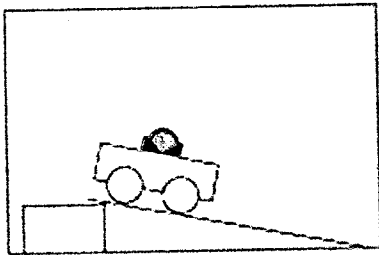


a vs t

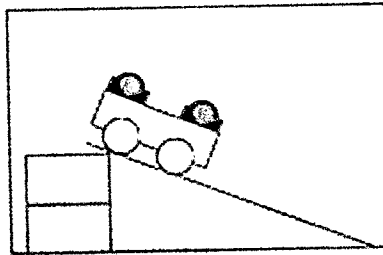
- A. 0 m/s/s
- B. 0.27 m/s/s
- C. 0.4 m/s/s
- D. 0.53 m/s/s

3.) A student wants to know if the weight of a cart affects its speed at the bottom of a ramp. He can change the weight of the cart by adding different numbers of balls, and he can change the height of the ramp by using different numbers of blocks. Which set of tests should he compare (set A, B, C, ~~or~~ <sup>or</sup>?)

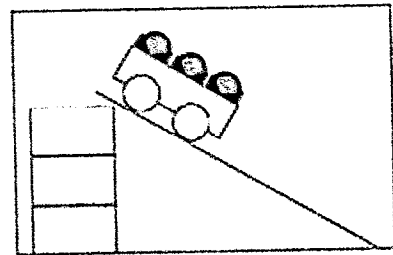
Set A  
↳



Test 1

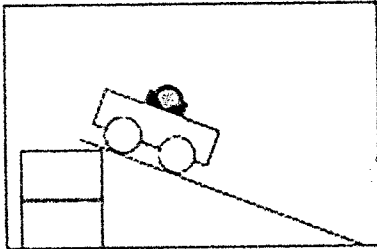


Test 2

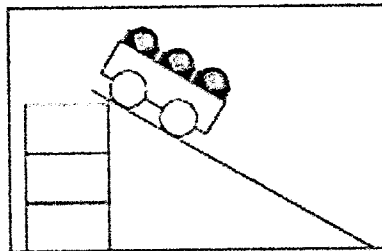


Test 3

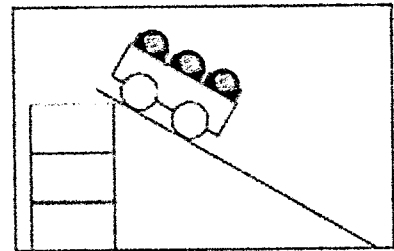
Set B  
↳



Test 1

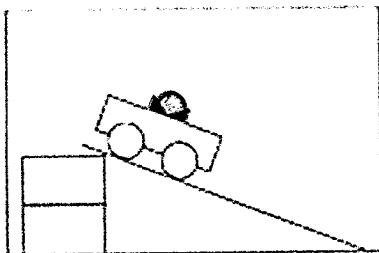


Test 2

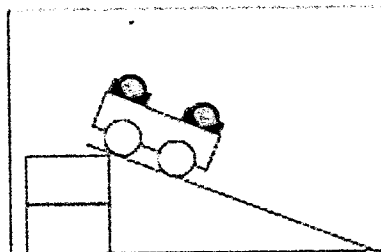


Test 3

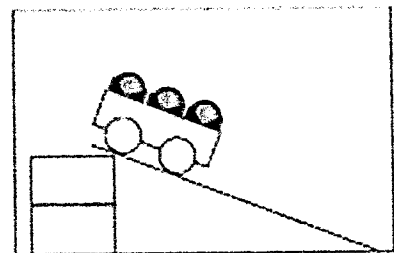
Set C  
↳



Test 1



Test 2



Test 3

4.) Force is needed:

- A. for a moving object to keep moving at the same speed and direction
- B. for a moving object to change its speed
- C. for a motionless object to remain still
- D. to prevent a moving object from turning