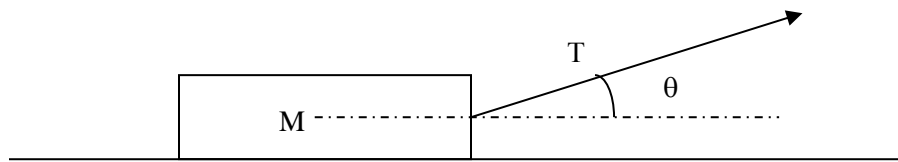


Directions: DO NOT WRITE ON THIS PRETEST! It serves you better not to write on this pretest to help you study. Choose only the best answer.

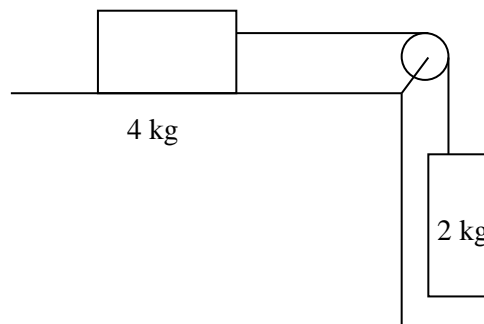
- The maximum acceleration a car may undergo with a coefficient of friction of 0.45 is:
a. 45 m/s^2 b. 4.41 m/s^2 c. 21.8 m/s^2 d. unable to be determined
- The coefficient of sliding friction of wood on wood is 0.30. The force needed to slide a wooden block weighing 500 N across a horizontal surface at a constant velocity is:
a. 50 N b. 150 N c. 300 N d. 500 N
- A block of mass "m" is pulled with constant velocity over a floor by a force "T" inclined at an angle θ with the floor as shown below. The coefficient of friction between the block and floor is " μ ". The magnitude of the frictional force is:

- $T \cos \theta$
- $T \sin \theta$
- zero
- μmg
- $\mu T \cos \theta$



- In the absence of an external force, a moving object will:
a. stop immediately
b. slowly slowdown and then stop
c. go faster and faster
d. move with constant speed
- In the SI, the unit for force is the:
a. kilogram b. pound c. Newton d. gram
- During the investigation of a traffic accident, police find skid marks 90 meters long. They determine that the coefficient of friction between a car's tires and the roadway to be 0.5 for the prevailing conditions. Estimate the speed of the car when the brakes were applied.
a. 28 mph b. 43 mph c. 52 m/s d. 67 mph e. 105 mph

- A 4 kg block is connected by means of a light rope to a 2 kg block as shown in the figure at the right.



In order for the 4kg mass to begin sliding the coefficient of static friction between the 4 kg mass and the surface must be.

- less than 0.5
 - greater than 0.5
 - less than zero
 - greater than 1
 - at least 2
- An automobile locks its wheels and slides to a stop from an initial speed of 30 m/s. If the coefficient of kinetic friction is 0.2, approximately how long does it take for the car to stop?
a. 7.5 sec b. 10 sec c. 15 sec d. 22.5 sec e. No clue how to solve

9. A sports car of mass 1000 kg can accelerate from rest to 27 m/s in 7.0 sec. What is the average forward force on the car?
a. 2.6×10^2 N b. 3.9×10^3 N c. 2.7×10^4 N d. 1.9×10^5 N
10. Which is larger?
a. Coefficient of Static Friction
b. Coefficient of Kinetic Friction
c. Coefficient of Constant Friction
d. Coefficient of Working Friction
11. A book of mass 10 kg is lying at the front desk of a classroom, coefficient of static friction is 0.5. A force of 40 N is applied to the book. The book will.....
a. move
b. not move
c. cannot say
d. none of the above
12. The Force Normal is:
a. always equal to the weight of an object
b. the normal force that is used to accelerate an object
c. the normal force of an object's weight
d. the force the surface exerts to support an object's weight force.
13. A force that always acts to oppose motion
a. Force
b. Mass
c. Acceleration
d. Friction
14. Forces of Friction are directly related to.....
a. mass of the object
b. Weight of the object
c. Force Normal of the object
d. acceleration of the object
15. Friction is a force that acts in a(n) _____ direction of movement
a. Similar
b. Parallel
c. Opposite
d. West
16. Which type of friction occurs when objects are not moving?
a. Static
b. Fluid
c. Sliding
d. Rolling
17. Which of the following is an example of friction that is helpful?
a. Brakes used on a bike
b. Tread on the bottom of your shoes
c. Tires from a car on the road
d. all of the above

18. What is the coefficient of static friction if it takes 44 N of force to move a box that weighs 86 N?
- 0.78
 - 0.78 N
 - 0.51
 - 0.51 N
 - 0.58 N
19. Which type of friction is the strongest? (has the greatest force)
- kinetic friction (sliding friction)
 - static friction
 - rolling friction
 - all forms of friction are equal for the same object
20. If an object moves with a constant velocity, we can conclude that
- Effort force is larger than friction force
 - there are no forces acting on it.
 - there is no unbalanced (net) force acting on it.
 - it has a very large inertia.
21. What is the net force on an 800-kg airplane flying with a constant velocity of 160 km/hour north?
- zero
 - 160 N
 - 800 N
 - 128 000 N
22. What kind of motion does a constant, non-zero net force produce on an object of constant mass?
- constant speed
 - constant acceleration
 - increasing acceleration
 - It depends on the speed of the object.
23. If you push on a railroad boxcar with a force of 200 N and it doesn't move, you can conclude that
- Newton's second law is not valid.
 - This force is canceled by the third law force.
 - The boxcar has too much mass to accelerate.
 - There is a force of 200 N in the opposite direction.
24. A 40-kg crate is being pushed across a horizontal floor. If the coefficient of sliding friction is 0.4, what is the frictional force acting on the crate?
- 16 N
 - 40 N
 - 100 N
 - 160 N
25. According to the formula for frictional force, as weight increases, friction should
- Increase
 - Decrease
 - Remain the same