

Coefficients of Friction Homework

⚠ This is a preview of the draft version of the quiz

Started: Nov 5 at 8:44am

Quiz Instructions

<https://www.youtube.com/watch?v=gl-aqzscRAM> [_ \(https://www.youtube.com/watch?v=gl-aqzscRAM\)](https://www.youtube.com/watch?v=gl-aqzscRAM)



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Question 1

1 pts

A 30 kg wood block is sliding across a wood floor with an applied 400 N push force. Between two wood surfaces the coefficient of static friction is .5 and the kinetic coefficient of friction is .3. What is the acceleration magnitude in m/s/s?

Question 2**1 pts**

A 30 kg wood block initially at rest on a wood floor is pushed with an applied 100 N push force. Between two wood surfaces the coefficient of static friction is .5 and the kinetic coefficient of friction is .3. What is the acceleration magnitude in m/s/s?

Question 3**1 pts**

What is the coefficient of kinetic friction between a wood floor and a 25 kg metal block if a push force of 250 Newtons is required to keep it sliding at a constant velocity? $g = -10 \text{ m/s/s}$

Question 4**1 pts**

What is the coefficient of kinetic friction between a wood floor and a 25 kg block of ice if a push force of 50 Newtons is required to keep it sliding at a constant velocity?

Question 5**1 pts**

A 40 kg wood block is at rest on a carpet floor. Between the wood and carpet surfaces the coefficient of static friction is .7 and the kinetic coefficient of friction is .4. What is the maximum static friction in Newtons between the block and the floor?

Question 6**1 pts**

A 40 kg wood block is sliding across a carpeted floor due to an applied 600 N push force. Between the wood and carpet surfaces the coefficient of static friction is .7 and the kinetic coefficient of friction is .4. What is the acceleration magnitude in m/s/s?

Question 7**1 pts**

The static coefficient of friction can be determined by dividing the maximum static friction by the mass.

- True
- False

Question 8**1 pts**

Static friction can vary from zero to a maximum threshold when two surfaces just begin to slide.

- True
- False

Question 9**1 pts**

The type of friction between your tire and the road that maximizes steering control is _____.

- kinetic
- static

Question 10**1 pts**

The friction between two surfaces is always determine by:

Choose all that apply.

- force normal
- force gravity
- mass
- contact surface area
- the coefficient of fricton

Question 11**1 pts**

Which of the following are correct reasons why racing tires are wide?

- wider tires dissipate heat more quickly

- wider tires allow for tires to be made of stickier but less ridged material
- wider tires provide more friction
- wider tires provide more traction when the road is wet

Question 12**1 pts**

If an object is being pushed at a constant velocity across a horizontal surface with which there is friction, the push force must be _____ in magnitude compared to the frictional force.

- smaller
- equal
- larger

Question 13**1 pts**

It is possible that the kinetic coefficient of friction and the static coefficient of friction can be the same.

- True
- False

Question 14**1 pts**

On planet earth, a file cabinet with mass 200 kg is resting on a horizontal tile floor. The force required to just get the cabinet moving is 500 N and the force to keep it sliding at a constant velocity after it begins to move is 300 N. If the 500 N of continues to be applied after the cabinet begins to move, what is its acceleration magnitude in m/s/s?

Question 15**1 pts**

The coefficient of friction between two materials is dependent upon which planet the two materials are located.

- True
- False

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