

2D Newton's Laws Test - Review

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

Started: Nov 8 at 12:27pm

Quiz Instructions

Question 1

1 pts

When two concurrent (aka simultaneous) forces of 6 and 10 Newtons act on an object, what is the maximum resultant?

Question 2

1 pts

When two concurrent (aka simultaneous) forces of 6 and 16 Newtons act on an object, what is the minimum resultant?

Question 3

1 pts

When two concurrent (aka simultaneous) forces of 3 and 4 Newtons act on an object with an angle of 90 degrees between them, what is the magnitude of the resultant?

Question 4**1 pts**

The minimum resultant of two forces acting on an object will occur when the angle between the two vectors is _____ degrees.

- 45
- 0
- 180
- 90
- 120
- 30

Question 5**1 pts**

The maximum resultant of two forces acting on an object will occur when the angle between the two vectors is _____ degrees.

90

180

0

45

30

Question 6

1 pts

A resultant force of 10 Newtons is made up of two vector components acting at 90 degrees to one another. If the magnitude of one component is 8 Newtons, what is the magnitude of the other component?

Question 7

1 pts

The equilibrant is the negative of the resultant.

True False**Question 8****1 pts**

A 8 Newton vector pointed North is added to a 8 Newton vector pointed east, what is the direction of the resultant?

 NE SE NW SW**Question 9****1 pts**

A 6 Newton vector pointed North is added to a 6 Newton vector pointed east, what is the direction of the equilibrant?

 SW NE SE NW

Question 10**1 pts**

A 6 Newton vector pointed North is added to a 6 Newton vector pointed east, what is the magnitude of the resultant?

Question 11**1 pts**

It is possible for two vectors of magnitude 4 each to add to a resultant of 11.

- True
- False

Question 12**1 pts**

It is possible for two vectors of magnitude 4 each to add to a resultant of 6.

- True

False

Question 13**1 pts**

For objects on an inclined plane, equilibrium along the ramp is achieved when friction force is congruent to the weight parallel component.

True

False

Question 14**1 pts**

For objects on an inclined plane, equilibrium perpendicular to the ramp is achieved when force normal is congruent to the weight perpendicular component.

True

False

Question 15**1 pts**

An object sliding down an inclined plane at a constant velocity is not in equilibrium.

- True
- False

Question 16**1 pts**

An object accelerating down an inclined plane at velocity is in equilibrium.

- True
- False

Question 17**1 pts**

Force normal is always pointed in the opposite direction of force gravity.

- True
- False

Question 18**1 pts**

Force normal is always pointed in the opposite direction of the perpendicular component of weight--which is perpendicular to the ramp.

- True
- False

Question 19**1 pts**

The vertical component of a vector increases as the angle of the vector increases.

*Assume the vector angle is bounded between 0 and 90 degrees.

- True
- False

Question 20**1 pts**

Displacement is 0 meters if an object ends at the same position at which it began.

- True

False

Question 21**1 pts**

For objects on an incline, the coefficient of friction depends on the angle of the ramp and not the materials of the object.

True

False

Question 22**1 pts**

Friction is equal to force normal multiplied by the coefficient of friction.

True

False

Question 23**1 pts**

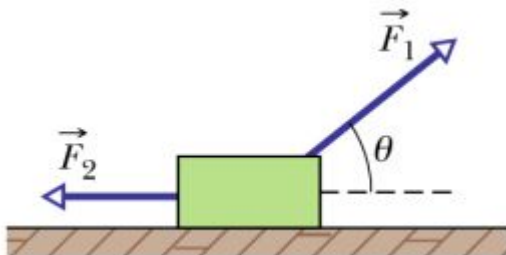
Velocity is a vector and can be resolved (aka 'broken up') into two component vectors.

- True
- False

Question 24**1 pts**

The angle of the ramp is always equal to the angle between the weight force vector and the perpendicular weight component vector.

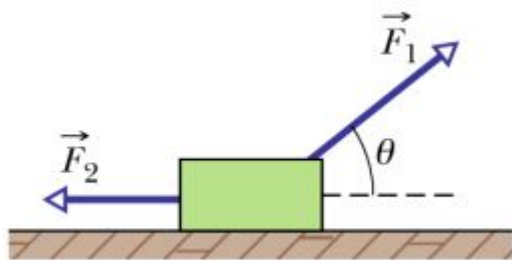
- True
- False

Question 25**1 pts**

If the block is in equilibrium, the _____ component of F_1 must be congruent to F_2 .

- horizontal

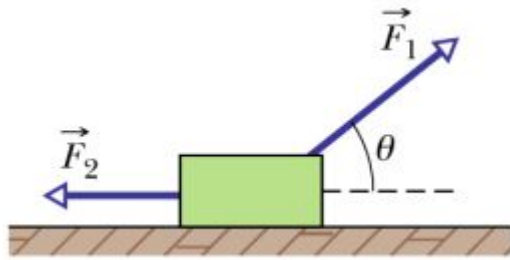
- vertical

Question 26**1 pts**

The force normal on the block from the ground would be _____ compared to a scenario in which there were no F_1 force on the block.

- the same
- smaller
- larger

Question 27**1 pts**

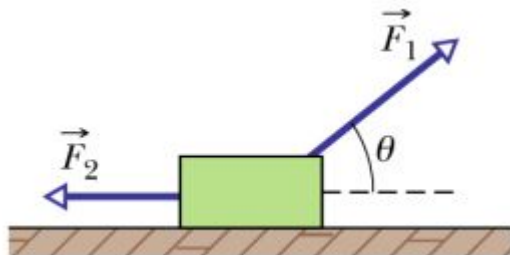


If F_2 is smaller in magnitude than the horizontal component of F_1 , the block must be _____.

- slowing down.
- at rest.
- speeding up.
- in equilibrium.
- accelerating.

Question 28

1 pts

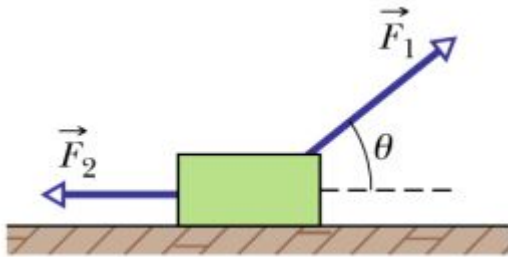


If F_2 is larger in magnitude than the horizontal component of F_1 , the block must be _____.

- speeding up.
- at rest.
- accelerating.
- in equilibrium.
- slowing down.

Question 29

1 pts

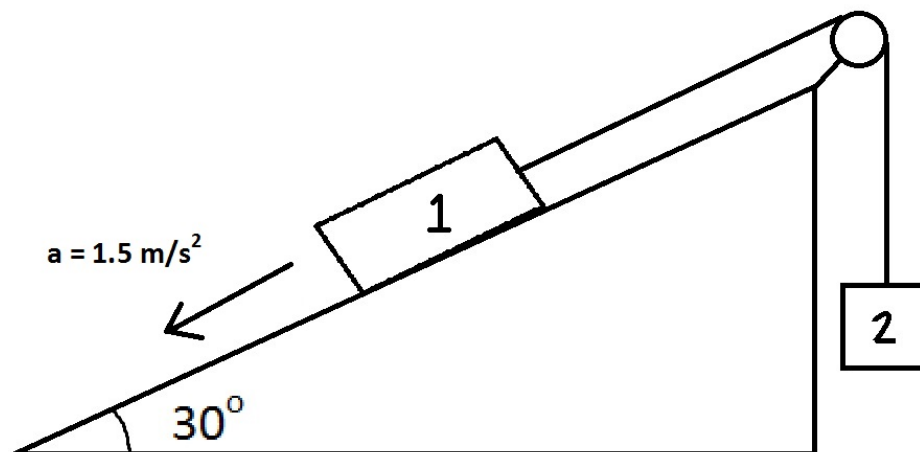


If the force gravity of the block is smaller in magnitude than the vertical component of F_1 , the block must be _____ in the vertical direction.

- at rest.
- accelerating.

Question 30

1 pts

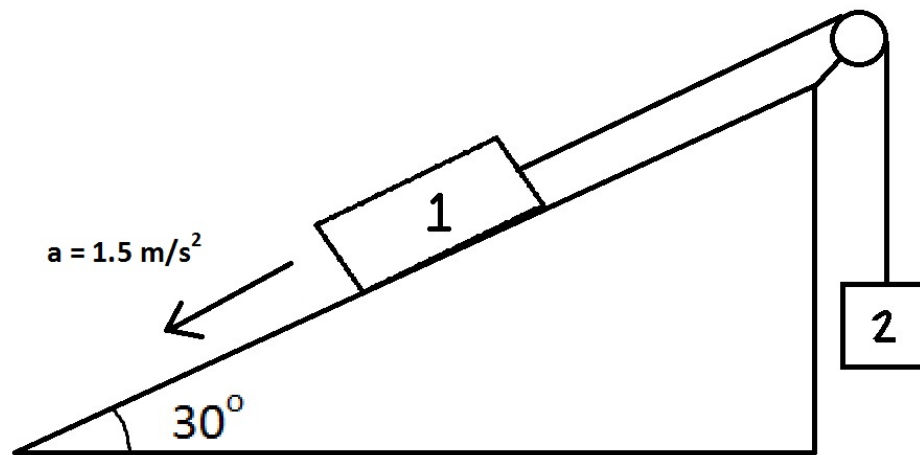


How many forces are acting on block 1? Assume no friction.

- 4
- 2
- 1
- 3
- 0

Question 31

1 pts



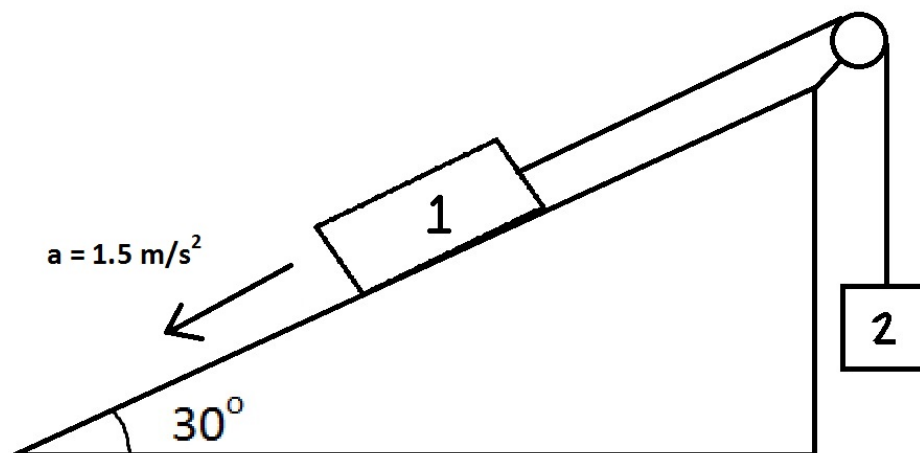
The coefficient of static and kinetic friction are both .2 between block 1 and the ramp.

How many forces are acting on block 1?

- 3
- 2
- 0
- 4
- 1

Question 32

1 pts

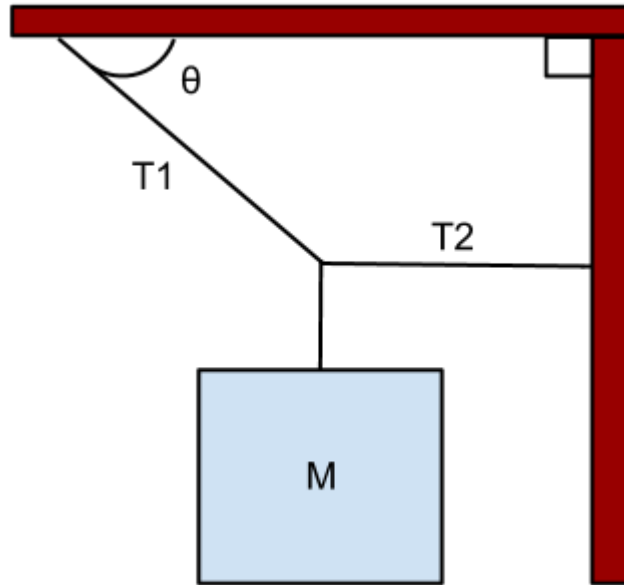


How many forces are acting on block 2?

- 1
- 0
- 4
- 2
- 3

Question 33

1 pts



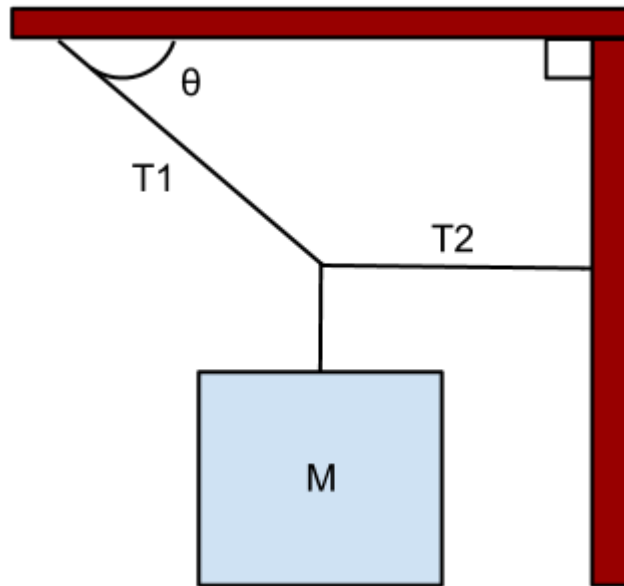
The tension in T2 is congruent to the _____ component vector of the tension in T1.

horizontal

verticaal

Question 34

1 pts



The weight force of M is congruent to the _____ component vector of the tension in T1.

- vertical
- horizontal

Question 35

1 pts

A 9 kg wood block is sliding across a horizontal wood floor with an applied 63 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 horizontal acceleration magnitude in m/s/s?

Question 36**1 pts**

What is the coefficient of kinetic friction between a horizontal wood floor and a 40 kg metal block if a push force of 100 N is required to keep it sliding at a constant velocity?

Question 37**1 pts**

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

True

False

Question 38**1 pts**

Wider tires allow for tires to be made of stickier but less ridged material.

- True
- False

Question 39**1 pts**

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

- True
- False

Question 40**1 pts**

The coefficient of friction is only dependent upon the two materials that are in contact with one another.

- True
- False

Quiz saved at 12:27pm

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