

Final Review Practice A

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

Started: Dec 16 at 10:09am

Quiz Instructions

This review is focused on the kinematic equations, but includes some Newton's laws and vector content.

$g = -10 \text{ m/s/s}$

Type in negatives and positive values unless otherwise stated.

Question 1

1 pts

Newton's first law states that objects with higher masses are easier to accelerate.

True

False

Question 2

1 pts

An airplane accelerates down a runway at 3.20 m/s^2 for 32.8 s until it finally lifts off the ground. Determine the distance traveled before takeoff. do not include units or commas in your answer.

Question 3

1 pts

A car starts from rest and accelerates uniformly over a time of 5.21 seconds for a distance of 110 m. Determine the acceleration of the car.

do not include units or commas in your answer.

Question 4**1 pts**

A rock is thrown straight upward off the edge of a balcony that is 5 m above the ground. The rock rises 10 m, then falls all the way down to the ground below the balcony. What is the rock's displacement?

do not include units or commas in your answer.

Question 5**1 pts**

A car is moving with a velocity of 72 km/h. It's velocity is reduced to 36 km/h after covering a distance of 200 m. Calculate its acceleration in m/s/s.

do not include units or commas in your answer.

Question 6**1 pts**

How Much force must you exert in order to hold a 200kg box over your head and keep it from moving? $g = 9.8 \text{ m/s/s}$

do not include units or commas in your answer.

Question 7**1 pts**

A feather is dropped on the moon from a height of 1.40 meters. The acceleration of gravity on the moon is 1.67 m/s^2 . Determine the time for the feather to fall to the surface of the moon.

do not include units or commas in your answer.

Question 8**1 pts**

A bike accelerates uniformly from rest to a speed of 7.10 m/s over a distance of 35.4 m. Determine the acceleration of the bike.

do not include units or commas in your answer.

Question 9**1 pts**

A moving company needs to lift a 700 lb. (320kg) piano to the top floor of an apartment building. They set up a rope and pulley system on the balcony of the upper story apartment, and pull the piano up. If the piano initially has an **acceleration of 0.45 m/s^2** (<http://www.uwgb.edu/fencih/problems/dynamics/1D/1/#popup1>), what is the **tension in the rope** (<http://www.uwgb.edu/fencih/problems/dynamics/1D/1/#popup0>) during that period of time?

do not include units or commas in your answer.

Question 10**1 pts**

A 5kg rock is dropped 80 meters from a cliff. How long does it take to reach the ground?

$g = 9.8 \text{ m/s/s}$

Question 11**1 pts**

A 5kg rock is dropped 80 meters from a cliff. What is the Force of Gravity acting on the rock?

$g = 9.8 \text{ m/s/s}$

Question 12**1 pts**

The Lamborghini Murcielago has a mass of 1,746kg and can accelerate from 0 to 27.8 m/s (100 km/hr or 62.2 mi/hr) in a time of 3.40 seconds. Determine the force used to reach these velocities.

Question 13**1 pts**

Oscar, whose mass is 52 kg, experienced a **net force** of 1800 N at the bottom of a roller coaster loop during his school's physics field trip to the local amusement park. Determine Oscar's acceleration at this location.

Question 14**1 pts**

A bag of groceries is on the back seat of your car as you stop for a stop light. The bag does not slide. Choose more than one.

Which of the following forces are acting on the bag?

Gravity

Normal

Spring

Tension

Friction

Question 15**1 pts**

Two children fight over a 200g stuffed bear. The 25kg boy pulls to the right with a 15N force and the 20kg girl pulls to the left with a 17N force.

Ignore all other forces on the bear (such as its weight).

True or False

You can determine the velocity of the bear with the above information.

True

False

Question 16**1 pts**

Two children fight over a 200g stuffed bear. The 25kg boy pulls to the right with a 15N force and the 20kg girl pulls to the left with a 17N force.

Ignore all other forces on the bear (such as its weight).

At this instant, you can say what the acceleration of the bear is.

True

False

Question 17**1 pts**

Two children fight over a 200g stuffed bear. The 25kg boy pulls to the right with a 15N force and the 20kg girl pulls to the left with a 17N force.

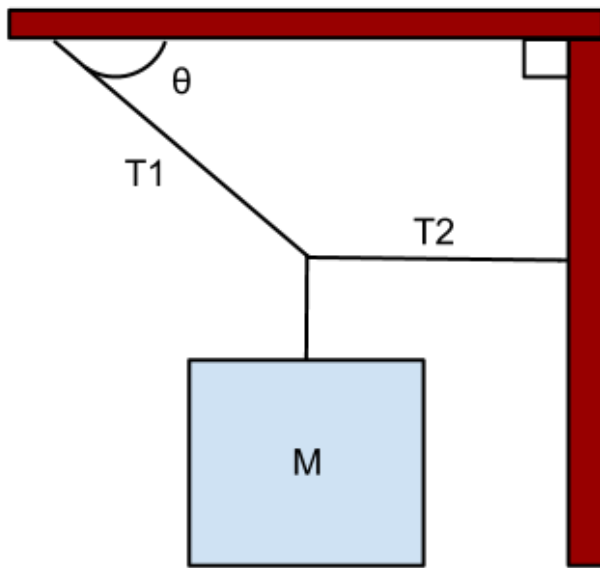
Ignore all other forces on the bear (such as its weight).

What direction is the acceleration?

Right

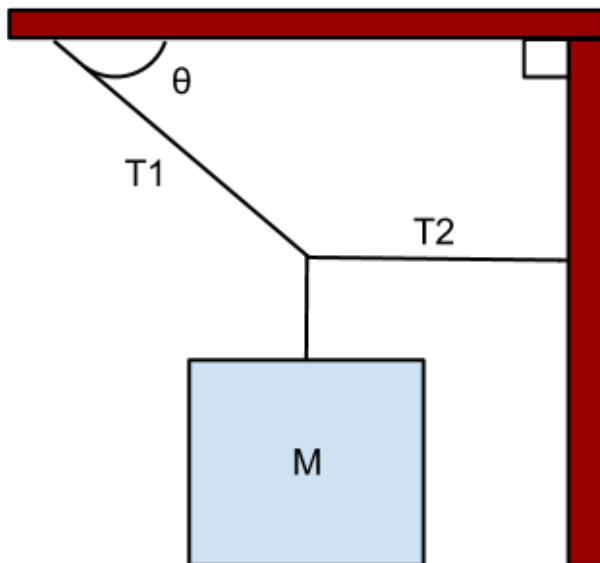
Left

Question 18**1 pts**



The tension in T_2 is congruent to the _____ component vector of the tension in T_1 .

- horizontal
- vertical

Question 19**1 pts**

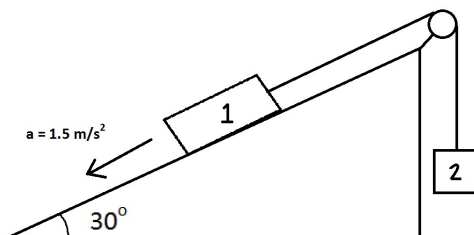
The weight force of M is congruent to the _____ component vector of the tension in T1.

horizontal

vertical

Question 20

1 pts



Between block 1 and the ramp, the coefficient of static friction is .3. The coefficient of kinetic friction is .2.

How many forces are acting on block 1?

3

2

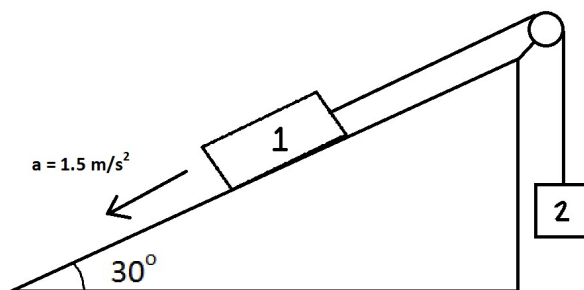
0

1

4

Question 21

1 pts



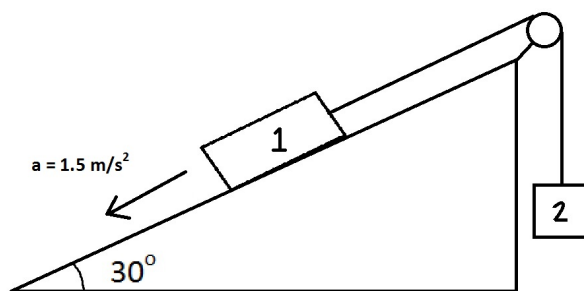
Between block 1 and the ramp, the coefficient of static friction is .3. The coefficient of kinetic friction is .2.

How many forces are acting on block 2?

- 4
- 1
- 0
- 2
- 3

Question 22

1 pts



Assuming no friction, how many forces are acting on block 1?

- 2
- 1
- 0

3 4**Question 23****1 pts**

An object in free fall on planet earth travels a distance of 128 meters when it begins from rest. What is the time that passed during its fall? $g = 10 \text{ m/s}^2$

Choose the closest answer

 5 2 9 7**Question 24****1 pts**

An object accelerates horizontally from rest at 12 m/s^2 over a distance of 300 meters. How much time passed over the 300 meter distance? Choose the closest answer.

 7 10 5 14**Question 25****1 pts**

An object accelerates horizontally from rest at 3 m/s^2 for 20 seconds. How much distance was traveled? Choose the closest answer in meters.

1200

600

1500

2400

Not saved

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