District Performance Task Review

This is a preview of the draft version of the quiz

Started: Feb 27 at 2:26pm

Quiz Instructions

Question 1

1 pts

A graph of the force applied to a spring and the distance it compresses is created for Spring A. The graph produces a slope of K = 30 N/m. If a mass of .25 kg is launched vertically from Spring A when it is compressed .5 meters, what is the energy stored in the spring in Joules? g = 10 m/s/s

Assume air resistance is negligible.

Question 2

1 pts

A graph of the force applied to a spring and the distance it compresses is created for Spring A. The graph produces a slope of K = 30 N/m. If a mass of .25 kg is launched vertically from Spring A when it is compressed .5 meters, what is the maximum height reached by the mass in meters? g = 10 m/s/s

Assume air resistance is negligible.

Question 3

1 pts

A graph of the force applied to a spring and the distance it compresses is created for Spring A. The graph produces a slope of K = 30 N/m. If a mass of .25 kg is launched vertically from Spring A when it is compressed .5 meters and it reaches a maximum height of 1 meter, how much energy was converted to heat on its way up in Joules? g = 10 m/s/s

Question 4

1 pts

A graph of the force applied to a spring and the distance it compresses is created for Spring B. The graph produces a slope of K = 80 N/m. If a mass of .2 kg is compressed 2 meters into the spring, what is the energy stored in Joules within the spring ? g = 10 m/s/s

Question 5

1 pts

A graph of the force applied to a spring and the distance it compresses is created for Spring B. The graph produces a slope of K = 80 N/m. If a mass of .2 kg is launched at an angle of 45 degrees from Spring B when it is compressed 2 meters, what is the maximum height reached by the mass in meters? g = 10 m/s/s

Assume no air resistance.

Question 6

1 pts

A graph of the force applied to a spring and the distance it compresses is created for Spring B. The graph produces a slope of K = 80 N/m. If a mass of .2 kg is launched at an angle of 45 degrees from Spring B when it is compressed 2 meters, what is the velocity of the mass at the apex of its trajectory in m/s? g = 10 m/s/s

Assume no air resistance.

Question 7

1 pts

An astronaut (mass 90 kg) and jet pack (mass 15 kg) are initially together at rest in outer space. The astronaut pushes the jet pack away such the jet pack travels in a positive direction at 30 m/s. What must be the astronaut's resulting velocity in m/s?

Question 8

1 pts

The slope of the force (N) v displacement (m) graph for a Hooke's Law Spring is equal to the spring constant.

- True
- False

Question 9

1 pts

What is the correct unit for the spring constant 'k'?

- N/m
- (kg*m)/s
- Nm
- J
- m/N
- (kg*s)/m

Question 10

1 pts

What is the correct unit for momentum?

- Nm
- m/s
- (kg*m)/s
- Newtons
- (kg*s)/m
- N/m

Question 11

1 pts

You should always write the correct unit (e.g. m/s, Newtons, Joules, etc...) next to your numeric answer.

- True
- False

Question 12

1 pts

Cart B travels at +4 m/s toward cart A which is initially at rest. The two collide in a perfectly inelastic collision. Cart B has mass 3 kg and cart A has mass 3 kg. What will the be speed in m/s of the two combined carts after the collision?

Question 13

1 pts

Cart B travels at +4 m/s toward cart A which is has initially velocity -1 m/s. Cart B has mass 1 kg and cart A has mass 2 kg. The two collide in an elastic collision. The final velocity of Cart B is -2 m/s. What will the velocity in m/s of cart A become after the collision?

Question 14

1 pts

Energy can neither be created nor destroyed.

- True
- False

Question 15

1 pts

Momentum is acceleration multiplied by mass.

- True
- False

Quiz saved at 2:27pm

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