Cumulative Worksheet 1

Test in DAY 2 - HOMEWORK

7
FEB

STATUS

1 What is the acceleration of a runner who accelerates from rest to a final velocity of 3.4 m/s in a time of 0.5 s?

4 Points

- 1.7 m/s^2
- 15 m/s^2
- 6.8 m/s^2
- 0 m/s^2

2 What is the kinetic energy of a skater with a mass of 75 kg traveling at a constant velocity of 3 m/s?

4 Points

- 337.5 J
- 112.5 J
- 6615 J
- 675 J

3 Two things are directly proportional if:

4 Points

- they both increase at the same rate.
- one increases at the rate the other decreases.
- one doubles when any change is made to the other.
- they are in the same formula.

4 What is the relationship between acceleration and time?

4 Points

- Acceleration is directly proporitonal to time.
- Acceleration is inversely proportional to time.
- Acceleration and time are unrelated.

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5 A box sits at rest on the floor. This is an example of:

4 Points

- static equilibrium.
- dynamic equilbrium.
- time.
- negative net force.

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6 In a vacuum with no outside forces, a ball is set in motion at a velocity of 6 m/s. How fast is it going 30 seconds later?

4 Points

- 5 m/s
- 6 m/s
- 180 m/s
- 0 m/s

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7 What is the relationship between weight and mass?

4 Points

- Weight is directly proportional to mass.
- Weight is inversely proportional to mass.
- There is no relationship between weight and mass.
- Weight and mass are the same thing.

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8 What is the force applied to an object with a mass of 38.2 kg that accelerates at 7.5 m/s^2

4 Points

- 5.09 N
- 0.196 N
- 45.7 N

- [x] 286.5 N

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9 What is the acceleration of a car that slows from an initial velocity of 12 m/s to a final velocity of 3 m/s in a time of 5 s?

4 Points

- [x] -1.8 m/s^2
- [ ] 3 m/s^2
- [ ] 2.4 m/s^2
- [ ] -0.6 m/s^2

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10 What is the mass of a car with a momentum of 13,850 kgm/s and a velocity of 10 m/s?

4 Points

- [ ] 138,500 kg
- [ ] 13,578 kg
- [ ] 2,000 kg
- [x] 1,385 kg

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11 A box is pushed with a force of 2.2 N for a distance of 8.3 m. How much work was done on the box?

4 Points

- [ ] 3.77 J
- [ ] 10. J
- [x] 18.26 J
- [ ] 6.1 J

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12 How much power does an object have that does 483.8 J of work in a time of 2 s?

4 Points

- [ ] 967.6 W
- [x] 241.9 W
- [ ] 49.37 W
- [ ] 2370.62 W

13 What is the mass of an object that has a weight of 758.52 N?

4 Points

- 758.52 kg
- 7433.496 kg
- 77.4 kg
- 0.013 kg

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14 What is the velocity of a skater with a mass of 67 kg and a momentum of 589.6 kgm/s?

4 Points

- 0.11 m/s
- 7.5 m/s
- 39503.2 m/s
- 8.8 m/s

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15 How much work is done to an object with a weight of 56.4 N that is raised to a height of 9.1 m?

4 Points

- 52.37 J
- 5029.752 J
- 6.198 J
- 513.24 J

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16 An object falls in free fall for 2.5 seconds. How far does it fall?

4 Points

- 24.5 m
- 30.625 m
- 12.25 m
- 61.25 m

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17 What is the acceleration of a car with a mass of 1500 kg while the engine is producing 9750 N of force?

4 Points

- [x] 6.5 m/s^2
- [ ] 0.15 m/s^2
- [ ] 14625000 m/s^2
- [ ] 1.508 m/s^2

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18 What is the potential energy of an apple with a mass of 0.6 kg hanging from a tree branch 2 m high?

4 Points

- [ ] 28.812 J
- [ ] 8.17 J
- [x] 11.76 J
- [ ] 0 J

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19 What is the average speed of a bicyclist who travels a distance of 6 m in a time of 2.5 s?

4 Points

- [ ] 0.42 m/s
- [ ] 15 m/s
- [ ] 3.5 m/s
- [x] 2.4 m/s

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20 What is the difference between scalars and vectors?

4 Points

- [ ] Scalars, like time, have only magnitudes and vectors, like momentum, have only direction.
- [ ] Scalars, like time, have only direction and vectors, like momentum, have only magnitudes.
- [ ] Scalars, like time, have direction and magnitude while vectors, like momentum, have only magnitudes.
- [x] Scalars, like time, have only magnitude while vectors, like momentum, have magnitude and direction.

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21 An orange with a mass of 0.4 kg hangs from a tree with a height of 3.5 m. If it falls, how much kinetic energy will it hit the ground with?

4 Points

- (•) 13.72 J
- ( ) 19.208 J
- ( ) 1.4 J
- ( ) 6.86 J

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22 How is the inertia of an object determined?

4 Points

- ( ) Inertia is determined by whether the object is moving.
- ( ) Inertia is determined by how high off the ground the object is.
- ( ) Inertia is determined by the object's location in space.
- (•) Inertia is determined by the mass of the object.

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23 What is it called when an object accelerates because of gravity and nothing else?

4 Points

- ( ) Inelastic collision
- ( ) Terminal velocity
- (•) Free fall
- ( ) Inertia
- ( ) Equilibrium

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24 Jill and Max need to move a heavy desk across the room. Jill pushes with a force of 150 N and Max helps out with a force of 225 N. What is the net force on the desk?

4 Points

- (•) 375 N
- ( ) 75 N
- ( ) 1.5 N
- ( ) 33,750 N

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25 Two pool balls collide and then move away from each other. This is an example of:

4 Points

- (•) an elastic collision

an inelastic collision

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