Worksheet: Day 2.2

Test in DAY 2 - IN CLASS

4
FEB

STATUS

1

Please note that you must finish this assignment before you leave today in order to receive full credit for attendance.

Please use the following equation sheet for reference:

Test1Equationsheet.pdf (https://assethub.fso.fullsail.edu/assethub/Test1Equationsheet_426ce67a-3564-4078-b8d4-ed93a5a765d5.pdf)

Select "Yes." below.

0 Points

⦿ Yes.

◯ Do not select this one.

2

A box is pushed with a force of 50 N across a distance of 3 m. How much work is done on the box?

5 Points

◯ 40 J

◯ 11.7 J

⦿ 150 J

◯ 1400 J

3

How much kinetic energy does a skater have before he starts to skate?

5 Points

◯ 9.8 J

◯ 0 J

◯ 300 J

⦿ Not enough information to answer.

4 How much momentum does a biker with a mass of 72 kg have when moving at a velocity of 13.4 m/s?

5 Points

- ⦿ 964.8 kgm/s
- ◯ 2.73 kgm/s
- ◯ 10,075 m/s
- ◯ 400 m/s

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5 A car with a mass of 1500 kg is traveling at a velocity of 7 m/s when it hits a stationary car with a mass of 2000 kg. If the two cars become entangled how much velocity will the combined cars move with after the collision?

5 Points

- ⦿ 3 m/s
- ◯ 9,000 m/s
- ◯ 13 m/s
- ◯ 45 m/s

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6 What is the relationship between potential energy and height?

5 Points

- ⦿ Potential energy is directly proportional to height.
- ◯ Potential energy is inversely proportional to height.
- ◯ There is no relationship between potential energy and height.

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7 How much potential energy does a skater with a mass of 20 kg have when he starts to skate at a height of 10 m?

5 Points

- ⦿ 1960 J
- ◯ 2000 J
- ◯ 100 J
- ◯ 990 J

8 How much work does an engine do with a power of 13 W for a time of 5 s?

5 Points

- ◉ 2.6 J
- ○ 18 J
- ○ 637 J
- ○ 65 J

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9 Two ice skaters stand in the center of an ice rink. They push off of each other and move in opposite directions. The conservation of momentum tells us that:

5 Points

- ○ the momentum of both skaters combined is greater before the collision.
- ○ the momentum of both skaters combined is greater after the collision.
- ◉ <mark>the momentum of both skaters combined is the same before and after the collision.</mark>

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10 A worker uses a pulley to lift a crate with a mass of 20 kg to a height of 3.5 m. How much work is done to lift the crate?

5 Points

- ○ 36 J
- ◉ 686 J
- ○ 9000 J
- ○ 15 J

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11 A ball of clay is thrown at a bottle. The clay collides with the bottle and wraps around it. This is an example of an elastic collision.

5 Points

- ○ True
- ◉ False

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12 Using the Conservation of Energy, if a skater with a mass of 75 kg starts to skate on a half pipe at a height of 8 m, how much kinetic energy will he have when he reaches a height of 0 m?

5 Points

○ 1000 J

◉ 5880 J

○ 10 J

○ 75 J

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13 A skater has a momentum of 140 kgm/s and is traveling at a velocity of 2 m/s. What is the skater's mass?

5 Points

○ 400 kg

○ 280 kg

◉ 70 kg

○ 3 kg

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14 A ball with a momentum of 1000 kgm/s collides with a stationary toy truck. If the ball immediately comes to rest, how much momentum does the toy truck have?

5 Points

◉ 0 kgm/s

○ 1000 kgm/s

○ There is not enough information.

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15 How much force does a conveyer belt apply to an object if it does 140 J of work to move the object a distance of 8 m?

5 Points

○ 30,096 N

◉ 17.5 N

○ 900 N

○ 0.051 N

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16 How much kinetic energy does a skater with a mass of 70 kg have when he moves at a velocity of 7 m/s?

5 Points

○ 1715 J

○ 2400 J

○ 150 J

○ 2 J

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17 What is the power of a conveyer belt that does 700 J of work in a time of 5 seconds?

5 Points

⦿ 140 W

○ 350 W

○ 143 W

○ 895 W

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18 A skater with a mass of 80 kg rolls down a half pipe from rest. At the bottom of the ramp, he has a velocity of 15 m/s. Using the Conservation of Energy, how much potential energy will he have when he reaches the top of the other side of the half pipe?

5 Points

○ 760 J

⦿ 9,000 J

○ 23,000 J

○ 100 J

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19 At what height will an object with a mass of 14.9 kg have a potential energy of 949.13 J?

5 Points

○ 33.4 m

⦿ 6.5 m

○ 173,892.83 m

○ 81.48 m

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20 How much distance was covered by an object that did 317.52 J of work using a force of 12.96 N?

5 Points

⦿ 24.5 m

○ 2.5 m

○ 3289.32 m

○ 0.01 m

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21 How much potential energy does an object have at a height of 0 m?

5 Points

○ 98 J

◉ 0 J

○ There is not enough information.

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