Worksheet: Day 3

Test in DAY 3 - IN CLASS

10
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:

Test2Equationsheet.pdf (https://assethub.fso.fullsail.edu/assethub/Test2Equationsheet_25371622-8a0e-400c-ac02-5a59449e166c.pdf)

Select "Yes." below.

0 Points

- (•) Yes.
- ( ) Do not select this one.

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2 What is the gravitational force between a planet with a mass of $6.65x10^{31}$ kg and its moon with a mass of $2.25x10^{23}$ kg if the distance between them is $3.84x10^{8}$ m?

4 Points

- (•) 6.768x10^27 N
- ( ) 6.76 N
- ( ) 50,000 N
- ( ) 6.78x10^8 N

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3 A ball rolls off the edge of a table and hits the floor after a time of 0.7 s. If the ball falls in free fall, how high is the table?

4 Points

- (•) 2.401 m
- ( ) 6.45 m
- ( ) 1.225 m
- ( ) 23.6 m

4 Using the Inverse Square Law, if two objects are moved two times closer than they were, how does the gravitational force between them change?

4 Points

- The force becomes two times stronger than it was.
- The force becomes four times weaker than it was.
- The force becomes two times weaker than it was.
- (•) The force becomes four times stronger than it was.

5 A base jumper launches herself straight off a cliff with a horizontal speed of 6 m/s and a vertical speed of 0 m/s. Ignoring air resistance and assuming she has not hit the ground yet, what is her vertical speed after a time of 5 s?

4 Points

- 39.2 m/s
- 0 m/s
- (•) 49 m/s
- 4 m/s

6 Which is $6.25x10^8$ in its expanded form?

4 Points

- .0000625
- 625,000
- (•) 625,000,000
- .00625

7 What happens to the force of gravitational attraction between two masses if the mass of one of the objects becomes three times greater than it originally was?

4 Points

- The force becomes three times weaker than it was.
- (•) The force becomes three times stronger than it was.
- The force becomes nine times stronger than it was.
- The force becomes nine times weaker than it was.

8 A bullet is fired horizontally at a speed of 640 m/s. Ignoring air resistance and assuming the bullet has not hit the ground yet, what is the horizontal speed after a time of 1.3 s?

4 Points

- 0 m/s
- 320 m/s
- 640 m/s
- 15.75 m/s

9 What other launch angle will cause a projectile to go as far as it does when launched at an angle of 33 degrees at the same initial speed?

In other words, what is the complementary angle?

4 Points

- 67 degrees
- 57 degrees
- 77 degrees

10 Which is $2.25x10^{-6}$ in standard notation

4 Points

- 0.00000225
- 2,250,000
- 0.225x10^-10
- 225x10^2

11 What speed does a satellite need to reach in order to maintain orbit around Earth?

4 Points

- 8,000 m/s
- 11,200 m/s
- 5 m/s
- 42,500 m/s

12 What is the gravitational force between a planet with a mass of $2.25x10^{13}$ kg and an asteroid with a mass of 6,500 kg if the distance between them is 2,000 m?

4 Points

- 2,000 N
- 2.44 N
- 3.0x10^10
- 6.0x10^-10

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13 If two objects are moved four times closer together, how does the gravitational force between the two objects change?

4 Points

- The force is four times stronger than it was.
- The force is sixteen times stronger than it was.
- The force is sixteen times weaker than it was.
- The force is four times weaker than it was.

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14 Complementary angles are:

4 Points

- two equal angles.
- two angles that add up to 180 degrees.
- three angles that add up to 90 degrees.
- two angles that add up to 90 degrees.

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15 A rock falls from a cliff. Assuming it falls in free fall and has not hit the ground yet, what is it's vertical speed after a time of 1.6 s?

4 Points

- 0 m/s
- 15.68 m/s
- 28.2 m/s
- 11.76 m/s

16 Which is 0.00000237 in correct scientific notation?

4 Points

- 2.37x10^-6
- 0.237x10^-5
- 2.37x10^6
- 237x10^-9

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17 Ignoring air resistance, which of the following is true about projectile motion?

4 Points

- The horizontal and vertical speeds change.
- The horizontal speed changes and the vertical speed is constant.
- The horizontal and vertical speeds are constant.
- The horizontal speed is constant and the vertical speed changes.

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18 What other launch angle will cause a projectile to go as far as it does when launched at an angle of 58 degrees at the same initial speed?

4 Points

- 18 degrees
- 32 degrees
- 108 degrees

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19 A rock falls from a cliff. Assuming the rock is in free fall, how far does the rock fall in 2.5 s?

4 Points

- 7.14 m
- 11.025 m
- 30.625 m
- 1.125 m

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20 Using the Inverse Square Law, if two objects are moved two times farther apart, how does the gravitational force between the two objects change?

4 Points

- The force becomes four times stronger than it was.
- The force becomes two times weaker than it was.
- The force becomes two times stronger than it was.
- (•) The force becomes four times weaker than it was.

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21 What speed does a satellite need to reach in order to escape Earth's gravitational force?

4 Points

- (•) 11,200 m/s
- 42,500 m/s
- 9,000 m/s
- 1,000,000 m/s

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22 A rock is thrown into the air with a horizontal speed of 8.7 m/s. Ignoring air resistance and assuming the rock has not yet hit the ground, what is the horizontal speed after a time of 4 s?

4 Points

- 6.2 m/s
- 48.2 m/s
- 0.3 m/s
- (•) 8.7 m/s

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23 How does the force of gravitational attraction between two objects change when the objects are moved five times farther apart than they were?

4 Points

- The force becomes five times stronger.
- The force becomes five times weaker.
- (•) The force becomes twenty-five times weaker.
- The force becomes twenty-five times stronger.

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24 Which is -4.89×10^5

4 Points

- 0.0000489
- 489
- -0.00000489
- -489,000

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25 What is the gravitational force between a comet with a mass of 20,000 kg and an asteroid with a mass of 5,000 kg when the distance between them is 1000 m?

4 Points

- 6.67x10^-9 N
- 9.338x10^-9 N
- 1.4 N
- 1400 N

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26 Weightlessness occurs when:

4 Points

- someone is carrying you.
- you carry a heavy object.
- you have no support force.
- you diet and lose weight.

Submit

Comments