Name

 Date

 Period

 ***Physics Binder Quiz #2***

\_\_\_\_\_\_\_\_\_\_\_ 1 What is the equation for torque when an ANGLE/theta is present?

\_\_\_\_\_\_\_\_\_\_\_ 2 Using the worksheet, Practice Problems for Torque (6), what was #3’s “output force”?

\_\_\_\_\_\_\_\_\_\_\_ 3 What are the units for Torque?

\_\_\_\_\_\_\_\_\_\_\_ 4 Would torque that is moving counter-clockwise be positive or negative?

\_\_\_\_\_\_\_\_\_\_\_ 5 What is Earth orbiting in #1 (Gravity and Centripetal Force (4) worksheet)?

\_\_\_\_\_\_\_\_\_\_\_ 6 In the Circular Motion Lab (5), how many trials did you perform?

\_\_\_\_\_\_\_\_\_\_\_ 7 Use Gravity and Centripetal Force (4) worksheet, #3- what is Deimos’ radius?

\_\_\_\_\_\_\_\_\_\_\_ 8 In the efficiency equation, what does the “W out” stand for?

\_\_\_\_\_\_\_\_\_\_\_ 9 What formula uses pie symbol?

\_\_\_\_\_\_\_\_\_\_\_ 10 Centrifugal acceleration refers to towards OR away from the center?

***Physics Calculation Quiz:#2 Gravitational, Circular, & Torque***

**Torque:**

1 What is the torque produced by a 20N force applied to a door 0.25m from the hinge? (no angle)

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| --- | --- | --- | --- |
| Units | Formula | Algebra | Solve |

2 Calculate the torque due to gravity on a 3.0kg simple pendulum attached to a 1.3 meter long string at 32 degrees from it’s at rest position. (Hint- F= mg)

|  |  |  |  |
| --- | --- | --- | --- |
| Units | Formula | Algebra | Solve |

**Circular Motion:**

3 The earth's orbit around the sun is very nearly circular, with an average radius of 1.5 x 108 km. Assume the mass of the earth is 6 x 1024 kg. What is the average speed of the earth in its orbit around the sun?

|  |  |  |  |
| --- | --- | --- | --- |
| Units | Formula | Algebra | Solve |

4 A sports car moving at 11 m/s takes a turn around a circle with a radius of 25.0 m. Determine the centripetal acceleration.

|  |  |  |  |
| --- | --- | --- | --- |
| Units | Formula | Algebra | Solve |

**Gravitational:**

 \*\*\*constant G = 6.67 x 10-11 Nm2/kg2\*\*

 (you may use my calculator/exponent Reference Sheet for this problem)

5 A rocket ship has a total mass of 1500 kg when it lands on Mars. Mars has a mass of 6.42x1023 kg, and a mean radius of 3.40x106 m. Find the force of gravity between Mars and the rocket ship.

|  |  |  |  |
| --- | --- | --- | --- |
| Units | Formula | Algebra | Solve |