Physics worksheet for 6 October 2017.

s is your student number. k = s mod 10000. T = s mod 100. m = s mod 35. a = s mod 25.

L = s mod 10. $d\_{2}=\frac{T-L}{10}$. e = s mod 8. m7 = s mod 7. m6 = s mod 6. m5 = s mod 5. m4 = s mod 4.

m3 = s mod 3. m2 = s mod 2. u = s + 10000.

1.1. How many significant figures are in your T number?

1.2. Calculate the compound errors for x = s, dx = 1/T; y = k, dy = 1/L.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/compound\_errors.txt

2.1. Find velocity and acceleration for one-dimensional motion with the equation x = -k + Lt + Tt2.

2.2. Add, subtract and multiply the vectors (T, k) and (L, s).

http://physics16.weebly.com/uploads/5/9/8/5/59854633/vectors\_arithmeric\_difference\_sum\_products.txt

3.1. Calculate the final speed after absolutely inelastic collision of two balls of masses L kg and T kg, moving with velocities s m/s and k m/s respectively.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/inelastic4collision.txt

3.2. Solve the elastic collision problem for u1 = k, u2 = k/2, m1 = k, m2 = 2k.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/linear2elastic4collision.txt

4.1.1. Find the acceleration of a simple pulley for two masses: L kg and T kg.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/problem4pulleys.txt

4.1.2. Find acceleration of a mass at the inclined plane with

 A = T degrees and the friction coefficient μ = 1/T.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/inclined4plane.txt

4.2. Solve the projectile problem for V0 = T meters per second and A = T degrees.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/code4projectile.txt

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/code4h4projectile.txt

5.1. Find the projectile release angle for the maximum distance = k and for the initial velocity V0 = k. Find the projectile release angle for the distance d = k, height h = k/7

 and for the initial velocity V0 = k.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/code4projectile.txt

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/code4h4projectile.txt

5.2. Find the center of mass of k equal masses k meters apart located on a straight line.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/center\_of\_mass\_of\_k\_masses.txt

6.1.1. Find the hangover for the s blocks in the blocks stacking problem.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/hangover.txt

6.1.2. Find the displacement of a harmonic oscillator after s seconds with amplitude k, frequency k and initial phase k/2.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/harmonic4oscillator.txt

6.2. Solve the string oscillatory equation for v = T. Find the displacement after s seconds at m meters.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/string\_equation\_solution.txt

7.1. The thermal expansion rate α is 1/k. The temperature change is T degrees.

 a. Find the extension of m meters rod due to the temperature change.

 b. Find the approximate volume change of m meters cubed cube due to the temperature change.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/thermal4expansion.txt

7.2. There are two bodies in a thermodynamically isolated system: C1 m1 T1 and C2 m2 T2. Find the resulting temperature T. m1 = k, m2 = 2k. C1 = k/11, C2 = k/222, T1 = k/111, T2 = k/22

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/result4temperature.txt

8.1. Solve the password and the number puzzles problems for your s.

 http://calculus17.weebly.com

8.2. Estimate the distances between the atoms of element number T in the periodic table of elements.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/distance\_between\_particles.txt

9.1. Find the force between two charges of L and T Coulombs for the distance apart of m meters.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/coulomb\_force.txt

9.2. Solve the simplified Maxwell Equations for c = 300000000-s. Find the intensity of electric field after s seconds at m meters.

 http://physics16.weebly.com/uploads/5/9/8/5/59854633/maxwell\_equations\_solution.txt

10. Improve your project.