**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ email \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Mr. Dwyer** **wdwyer@mtsinai.k12.ny.us** **Physics Honors Summer Assignment**

**2020-2021 Physics Honors Summer Assignment**

**If you are enrolled in Physics Honors, please e-mail me NOW!**

**Mr. Dwyer** **wdwyer@mtsinai.k12.ny.us**

**I will add you to my e-mail address book and the communication will begin! Please be sure to include Physics Honors with your first and last name in the subject line of the e-mail! I may email additional information/instructions as the summer progresses.**

**Physics Honors Summer Assignment is DUE on First Day of Class!**

**Tuesday September 8, 2020. Get started as soon as possible and pace yourself. E-mail with any questions as soon as they arise.**

**Purchase your physics review book at the High School!**

**This will either be in room 612 or the school store!**

**Prentice Hall Brief Review- The Latest Edition**

**Physics: The Physical Setting by Bernadine Hladik Cook**

**Topic 1 Measurement and Mathematics – Read the chapter.**

**Define the following terms in complete sentences.**

absolute error

accepted value

accurate

constant proportion

dependent variable

derived unit

direct squared proportion

directly proportional

experimental value

extrapolation

force

fundamental unit

independent variable

indirect squared proportion

inversely proportional

line of best fit

mass

mean

percent error

precise

range

scalar

scientific notation

SI prefix

SI system

significant figures

slope

standard deviation

unit

variance

vector

**Review Questions page 4 #1-16** Final Answers need to be placed in the answer space provided! Show all work where applicable!

1. \_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_
7. \_\_\_\_\_\_\_\_\_\_
8. \_\_\_\_\_\_\_\_\_\_
9. \_\_\_\_\_\_\_\_\_\_

10.\_\_\_\_\_\_\_\_\_\_

11.\_\_\_\_\_\_\_\_\_\_\_

12. \_\_\_\_\_\_\_\_\_\_

13. Show How

14. Show How

15.\_\_\_\_\_\_\_\_\_\_

16. Show How

**Review Questions pages 7-9 #17-32**

17.\_\_\_\_\_\_\_\_\_\_

18\_\_\_\_\_\_\_\_\_\_

19.\_\_\_\_\_\_\_\_\_\_

20.\_\_\_\_\_\_\_\_\_\_

21.\_\_\_\_\_\_\_\_\_\_

22.\_\_\_\_\_\_\_\_\_\_

23.\_\_\_\_\_\_\_\_\_\_ Show Work

24.\_\_\_\_\_\_\_\_\_\_ Show Work

25.\_\_\_\_\_\_\_\_\_\_

26.\_\_\_\_\_\_\_\_\_\_

27.a) \_\_\_\_\_\_\_\_\_\_ b) \_\_\_\_\_\_\_\_\_\_ Show Work

28.a) \_\_\_\_\_\_\_\_\_\_ b) \_\_\_\_\_\_\_\_\_\_ c) \_\_\_\_\_\_\_\_\_\_

29.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Draw a normal to this line. Then draw in the 40.0 degree angle from the normal.

30.a) \_\_\_\_\_\_\_\_\_\_ b) \_\_\_\_\_\_\_\_\_\_ Show Work

31.\_\_\_\_\_\_\_\_\_\_ Show Work

32.\_\_\_\_\_\_\_\_\_\_ Show Work

**Review Questions page 11 #33-48**

1. \_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_
7. \_\_\_\_\_\_\_\_\_\_
8. \_\_\_\_\_\_\_\_\_\_
9. \_\_\_\_\_\_\_\_\_\_
10. \_\_\_\_\_\_\_\_\_\_ Show Work
11. \_\_\_\_\_\_\_\_\_\_ Show Work
12. \_\_\_\_\_\_\_\_\_\_
13. \_\_\_\_\_\_\_\_\_\_
14. \_\_\_\_\_\_\_\_\_\_
15. \_\_\_\_\_\_\_\_\_\_ Show Work
16. \_\_\_\_\_\_\_\_\_\_ Show Work

**Review Questions pages 13-14 #49-73**

1. \_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_
7. \_\_\_\_\_\_\_\_\_\_
8. \_\_\_\_\_\_\_\_\_\_
9. \_\_\_\_\_\_\_\_\_\_
10. \_\_\_\_\_\_\_\_\_\_
11. \_\_\_\_\_\_\_\_\_\_
12. \_\_\_\_\_\_\_\_\_\_
13. \_\_\_\_\_\_\_\_\_\_
14. \_\_\_\_\_\_\_\_\_\_
15. \_\_\_\_\_\_\_\_\_\_
16. \_\_\_\_\_\_\_\_\_\_
17. \_\_\_\_\_\_\_\_\_\_
18. \_\_\_\_\_\_\_\_\_\_
19. \_\_\_\_\_\_\_\_\_\_
20. \_\_\_\_\_\_\_\_\_\_ Show Work
21. \_\_\_\_\_\_\_\_\_\_ Show Work
22. \_\_\_\_\_\_\_\_\_\_
23. \_\_\_\_\_\_\_\_\_\_ Show Work
24. \_\_\_\_\_\_\_\_\_\_ Show Work
25. \_\_\_\_\_\_\_\_\_\_ Show Work

**Review Questions pages 16-17 #74-85**

1. \_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_
7. \_\_\_\_\_\_\_\_\_\_
8. \_\_\_\_\_\_\_\_\_\_ Show Work
9. \_\_\_\_\_\_\_\_\_\_ Show Work
10. \_\_\_\_\_\_\_\_\_\_
11. \_\_\_\_\_\_\_\_\_\_ Show Work
12. \_\_\_\_\_\_\_\_\_\_ Show Work

**Review Questions pages 20-21 #74-85**

1. 1) 2) 3) 4)
2. \_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_
7. Sketch Graph
8. Sketch Graph

**Review Questions page 22 #94-103**

1. \_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_

100.\_\_\_\_\_\_\_\_\_\_

101.\_\_\_\_\_\_\_\_\_\_ Show Work

102.\_\_\_\_\_\_\_\_\_\_ Show Work

103.\_\_\_\_\_\_\_\_\_\_ Show Work

**Topic 2 Mechanics – Read the chapter.**

**Define the following terms in complete sentences.**

acceleration

centripetal acceleration

centripetal force

closed system

coefficient of friction

displacement

distance

equilibrium

free fall

free-body diagram

friction

gravitational field

gravitational field strength

gravity

horizontal component

impulse

inertia

instantaneous velocity

kinetic friction

kilogram

law of conservation of momentum

linear motion

mechanics

meter

momentum

net force

newton

normal force

period (of a pendulum)

resolution of forces

resultant

second

speed

static friction

tangent

unbalanced force

uniform circular motion

vacuum

vector component

velocity

vertical component

weight

**Topic 6 Modern Physics – Read the chapter.**

**Define the following terms in complete sentences.**

absorption spectrum

antimatter

antiparticle

antiquark

atom

atomic spectrum

baryon

bright-line spectrum

emission spectrum

energy level

energy-level diagram

excited state

ground state

hadron

ionization potential

lepton

meson

neutrino

nucleus

photon

Planck’s constant

positron

quantized

quantum

quantum theory

quark

spectral line

Standard Model of Particle Physics

stationary state

strong nuclear force

universal mass unit