Pakistan School
Kingdom of Bahrain

# Basic Rules of the Class:

- 1) Always be on time for all your classes
- 2)Always Respect your all Class fellows.
- 3)Do not create any disturbance.
- 4)Raise hand if you have any question or you wish to answer any question.
- 5)Pay attention to your teacher.
- 6)Please, Enter into the class with your actual Name and CPR number.
- 7)Always follow your Time Table.

# Engaging Starter

1pm = $10^{-12}$

# Welcome back to all!

## Grade 11th " Physics "

**Unit: 1**

**"Measurements"**

**Chap no. 1 " Exercise "**

# Exercise: Chap # 01 MCQ's

Select the correct answers of the following questions.

viii) The equation relating pressure and density is $p = \rho gh$. How can both sides of this equation be written in terms of base units?

(a) $[Nm^{-1}] = [kgm^{-3}][ms^{-1}][m]$

(b) $[Nm^{-2}] = [kgm^{-3}][ms^{-2}][m]$

(c) $[kgm^{-1}s^{-2}] = [kgm^{-3}][ms^{-2}][m]$

(d) $[kgm^{-1}s^{-1}] = [kgm^{-1}][ms^{-2}][m]$

ix) A series of measurements of the acceleration of free fall g is shown in the table which set of results is precise but not accurate?

| | g / $ms^{-2}$ | | | | |
|---|---|---|---|---|---|
| A | 9.81 | 9.79 | 9.84 | 9.83 | 9.79 |
| B | 9.81 | 10.12 | 9.89 | 8.94 | 9.42 |
| C | 9.45 | 9.21 | 8.99 | 8.76 | 8.51 |
| D | 8.45 | 8.46 | 8.50 | 8.41 | 8.47 |

x) A mass m has acceleration a. it move through a distance s in time t. The power used in accelerating the mass is equal to the product of force and velocity. The percentage uncertainties are. 0.1% in m, 1 % in a, 1.5 % in s, 0.5 % in t

What is the percentage uncertainty in power?

(a) 2.1% (b) 2.6% (c) 3.1% (d) 4.1%

# Exercise: Conceptual Questions.

**Q.7** Find the dimensions of Kinetic energy?

**Ans.** The kinetic energy is given by $KE = \frac{1}{2}mv^2$ ----- (i)

Dimensions of mass m = [M]

Dimensions of velocity v = $[LT^{-2}]$

Putting in eq. (i)

Dimensions of KE = $[M]\,[LT^{-1}]^2$

Dimensions of KE = $[M]\,[L^2T^{-2}]$

Dimensions of KE = $[ML^2T^{-2}]$

# Exercise: Conceptual Questions.

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Q.No.9: Are radians and steradians the base units of SI ?
Justify your answer.

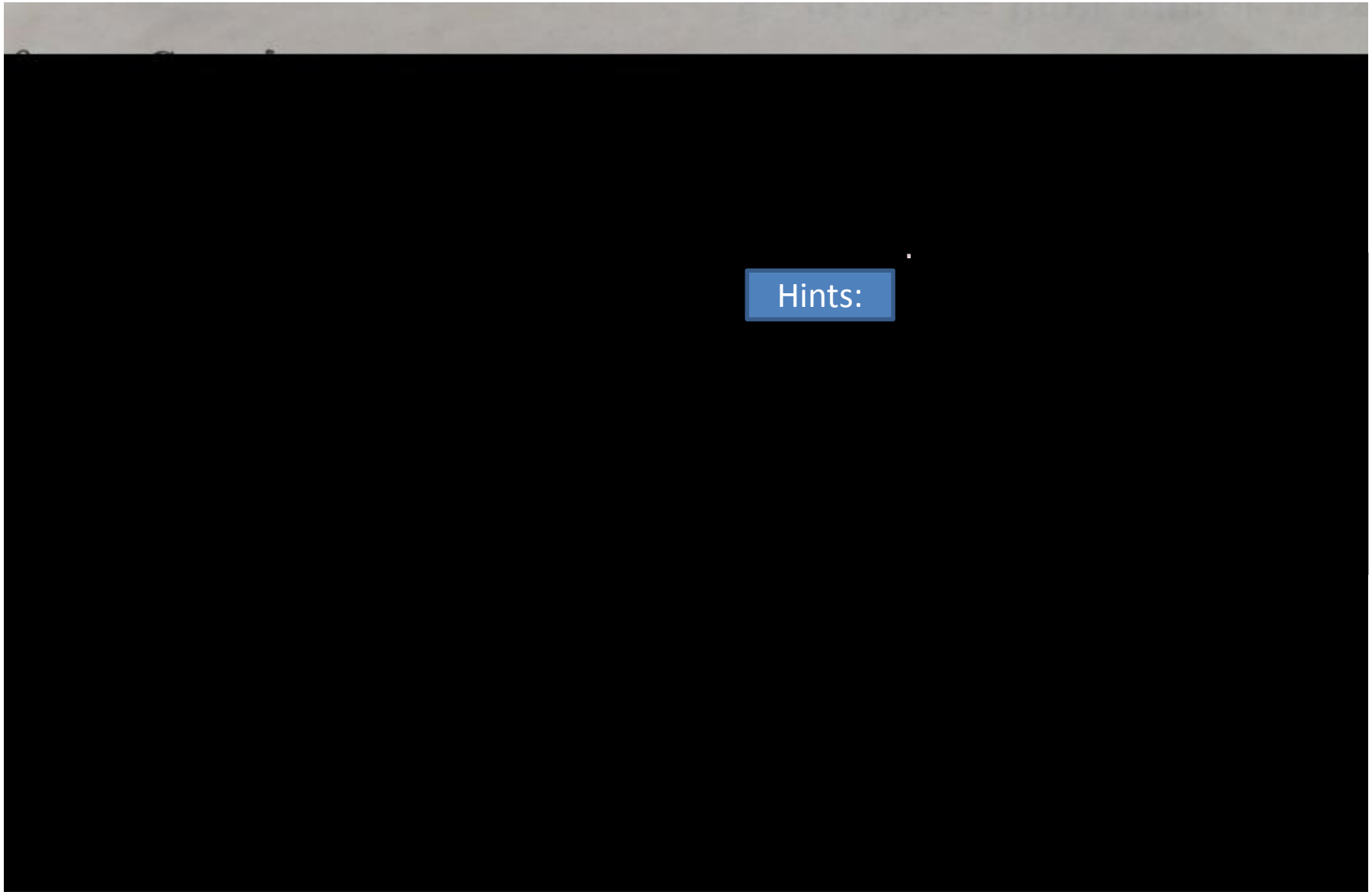
In 1940 the general conference on weights and measures in Paris, has not yet classified certain units of the (SI) under either base units or derived units. This class contains only two units of purely geometrical quantities and are called supplementary units.

(i) Plane angle(2D) : The SI unit of plane angle is Radian.

(ii) Solid angle(3D) : The SI unit of Solid angle is Steradian.

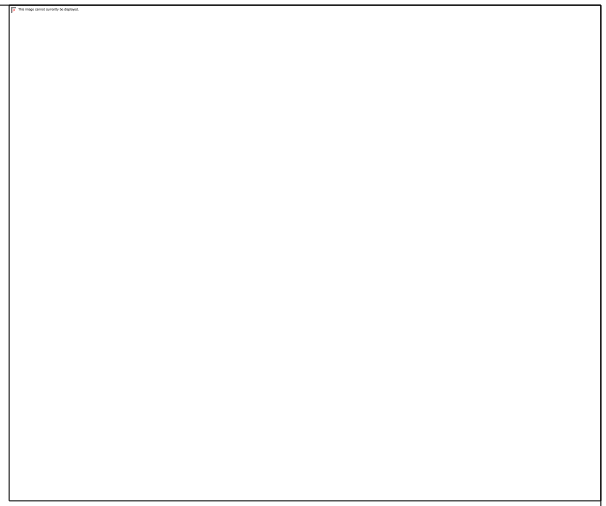
Hence radians and steradians are not the base units but are supplementary units.

# Exercise: Numerical Problems.



# Exercise: Numerical Problems.

Hints:



# Closure!

1. What are supplementary units?
2. Give any two draw backs of using period of the pendulum as a time standard.
3. 1m = _____cm
4. 1 Km = _____ m
5. 1hr = _____s

# ***Home Work***

- Students should Revise and Practice today's Exercise Mcq's . . . conceptual questions and numerical problems..... at home and also consult uploaded notes on the school website.

# Thank you…..