Provincial Department of Education – Sabaragamuwa – Week School

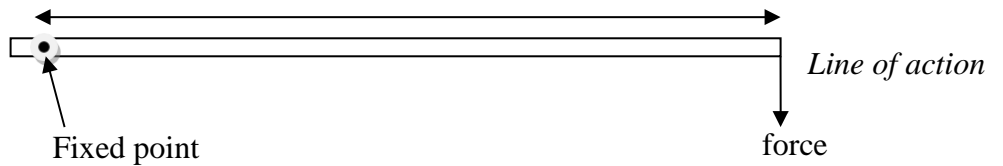|	
Subject - Science	**Week – June III**
Grade -10	**Translated by: M.G.P. Miyanadeniya Kg/Dehi/Dr. N.M. Perera M.M.V.**

Turning Effect of a Force

1. By applying a force, we can rotate or turn an object around a given point.
Give 3 instances where an object can rotate by applying a force.

perpendicular distance to the force from the axis

Line of action

Fixed point   force

The stick rotates around the point.

   I.   What is meant by the moment?

   II.   Complete the following equation about the moment.

       Moment =…………………………………….. X …………………………………………

   III.   What is the measuring unit of moment?

3. Since the moment is a tendency for rotation, depending on whether the rotation is clockwise or anticlockwise, the moment too has to be clockwise or anticlockwise.
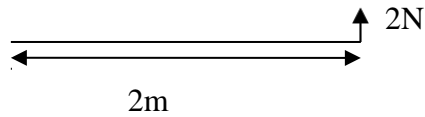   Find the direction of the moment in the following instances.
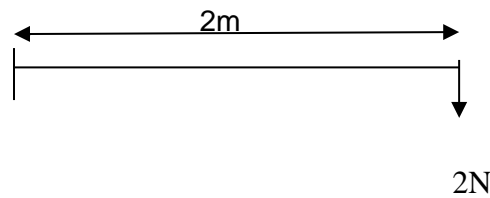

Forc

Forc

…………………………………….   …………………………………………
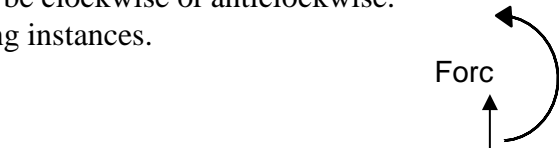
4. Calculate the moment and find the direction of following.

```
                                    ↑ 2N
 ────────────────────────────────┐
 ◄────────────────────────────────►
          2m
```

   Moment =……………………………. X ………………………………

   =…………………………….. X ………………………………

   =…………………………………………………..

```
            2m
 ◄──────────────────────────►
 ┬                          │
 │                          ▼

                          2N
```

   Moment =……………………………. X ………………………………

   =…………………………….. X ………………………………

   =…………………………………………………..

5. Calculate the moment of the following system.

```
              ////
     3m        │           6m
 ◄──────────►  │  ◄──────────────────────►
 │            │                          │
 ▼            ▼                          ▼
 4N                                      2N
```
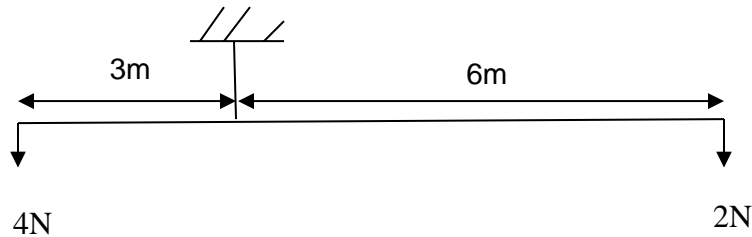
   Anti-clock wise Moment   =…………………………. X ………………………

   =…………………………….X …………………………….

   =……………………………………………………..

   Clockwise Moment   =…………………………. X ………………………

   =………………………….X …………………………

   =……………………………………………………
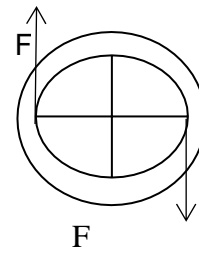
   Is the above system rotate or in equilibrium? ……………………………….

6. When a couple of forces is applied on an object, the resultant may be a moment.

F

F

F

F
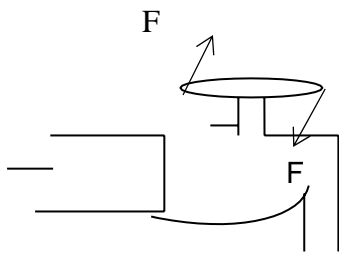
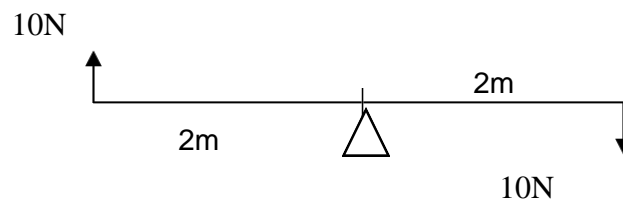**A couple of forces acts on the tap head.**   **Rotating the steering wheel**

- What are the features of the moment of the couple force?

7. Complete the following equation related to the moment of the couple force.

  a. Moment of the couple force = …………………. X …………………………….
  b. Calculate the moment of the couple force.

    10N

          2m

      2m

          10N

  c. What is the direction of the moment?