



# ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION



Sub: Physical Science

Class: 8

Date: 10.05.21

Duration: 40 min

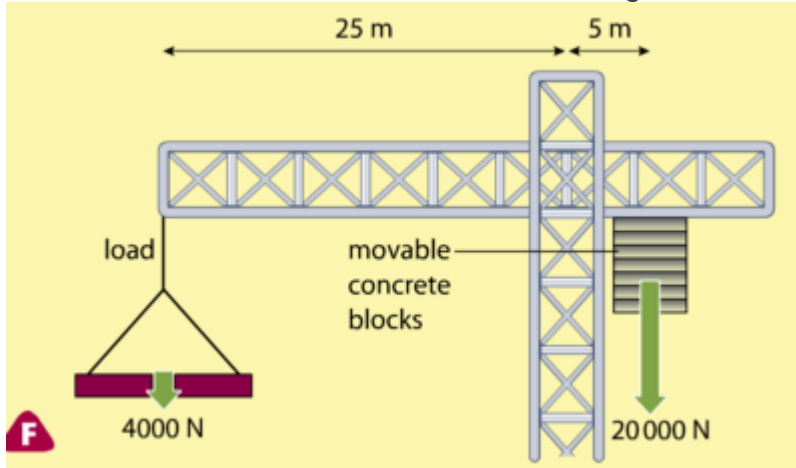
Worksheet Solution 27

Full Marks: 15

Moment of Force

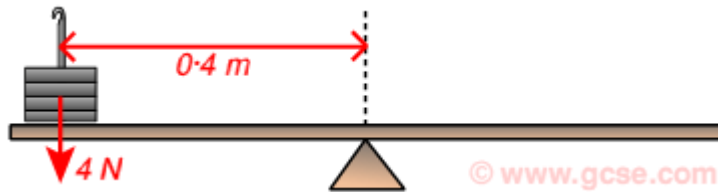
Choose the Correct options:

1. What is the anticlockwise moment acting on this crane?



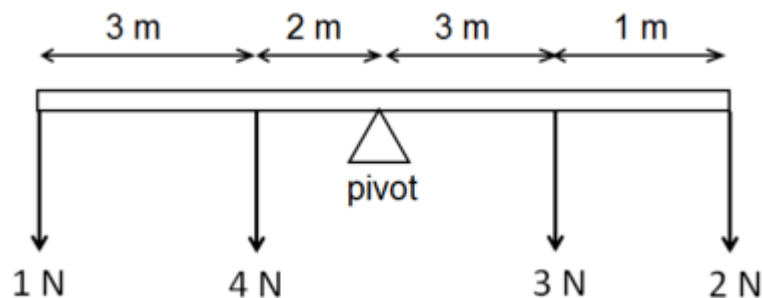
- a. 80,000Nm
- b. **100,000Nm**
- c. 120,000Nm
- d. 140,000Nm

2. What is the moment acting on the seesaw?



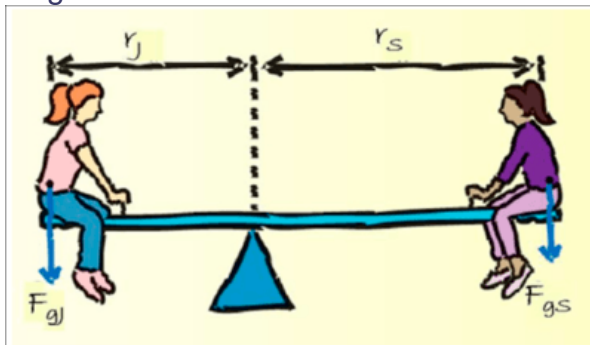
- a. **1.6Nm**
- b. 15Nm
- c. 16N
- d. 4Nm

3. What is the net Moment?

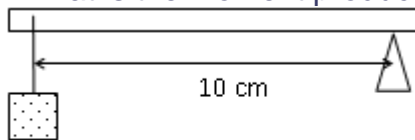


- a. 0 Nm
- b. **4 Nm (clockwise)**
- c. 30 Nm (clockwise)
- d. 30 Nm (anti-clockwise)

4. If the board is 2 meters in length, and the girl on the left who is 45 kg is far away 0.8 meters from pivot point what is the mass of the girl on the right?



- a. 20 kg  
 b. 25 kg  
 c. **30 kg**  
 d. 35 kg
5. What is the moment produced by the 15 N?



15 N

- a. 15 Nm (clockwise)  
 b. 150 Nm (anti - clockwise)  
 c. **1.5 Nm (anti - clockwise)**  
 d. 0.15 Nm (clockwise)
6. State the *principle of moments*.
- a. **When a system is in equilibrium, the sum of the total clockwise moment is equal to the sum of the total anti-clockwise moment about the same pivot.**  
 b. When a system is in equilibrium, the sum of the total clockwise moment is greater than the sum of the total anti-clockwise moment about the same pivot.  
 c. When a system is in equilibrium, the sum of the total clockwise moment is less than the sum of the total anti-clockwise moment about the same pivot.  
 d. When a system is in equilibrium, the sum of the total clockwise moment is equal to the sum of the total anti-clockwise moment about the different pivot.
7. The moment of force is called
- a. **The turning effect of a force**  
 b. The turning effect of a moment  
 c. The turning effect of a rod  
 d. The turning effect of an equilibrium
8. The moment of force is defined as the product of....
- a. the force and the acceleration  
 b. the force and the perpendicular distance  
 c. the force and the velocity  
 d. **the force and the perpendicular distance from pivot**
9. What is the correct equation for calculating a force?
- a. force = perpendicular distance x moment  
 b. **force = moment / perpendicular distance**  
 c. force = perpendicular distance / moment  
 d. None of these

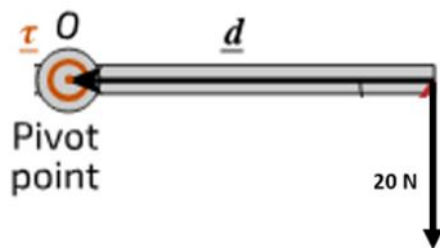
10. What is the correct equation for calculating a perpendicular distance?

- a. perpendicular distance = force x moment
- b. perpendicular distance = force / moment
- c. perpendicular distance = moment / force**
- d. None of these

11. What is the unit of moment f force?

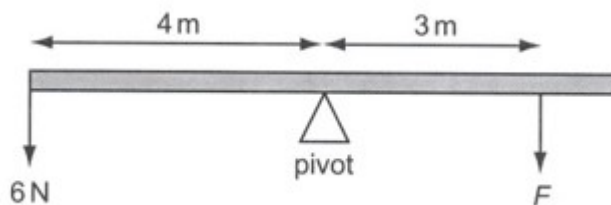
- a. N
- b. m
- c. Nm**
- d. N/m

12. A metal rod of length 100 cm is held horizontally at point O to the end. A force of 4 N acts of the rod pulling it downwards. Calculate the moment of the force!



- a. 40 Nm
- b. 4 Nm**
- c. 0.4 Nm
- d. 0.04 Nm

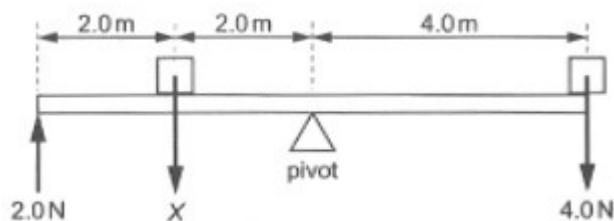
13. A uniform bar is pivoted at its centre.



What force **F** is needed to balance the bar?

- a. 3 N
- b. 4 N
- c. 6 N
- d. 8 N**

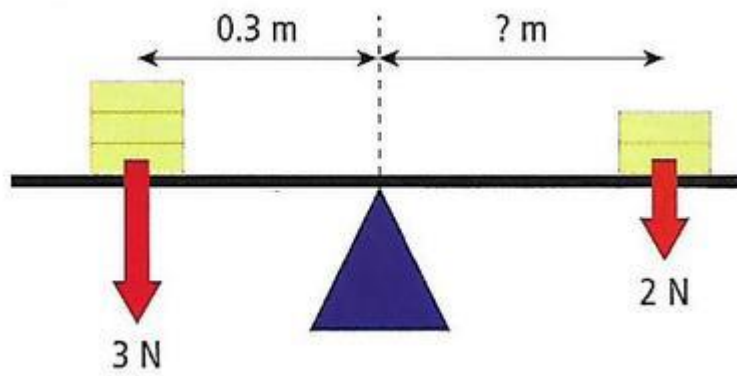
14. Calculate the unknown force X!



- a. 4.0 N**
- b. 6.0 N

- c. 10 N
- d. 12 N

15. What distance should a 2N load placed from the pivot so that the see saw won't move?



- a. 0.2m
- b. 0.5m
- c. **0.45m**
- d. 0.42m