

Homework 31b Just a moment

1. Use the words in the HELP-BOX to copy and complete the paragraph below.

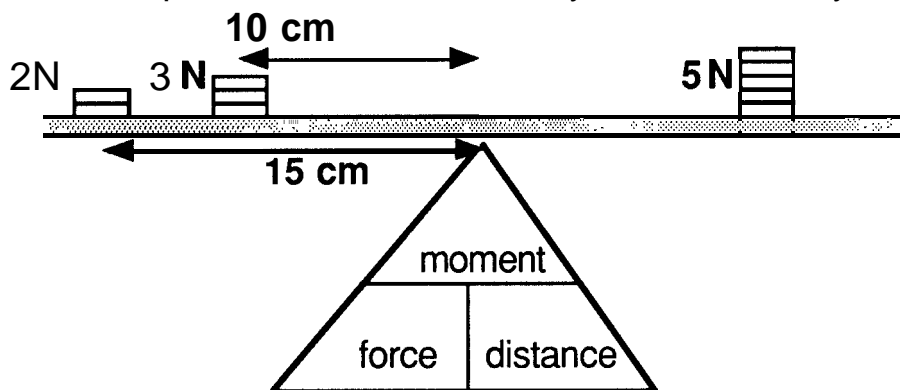
pivot	anti-clockwise
equal	long

It is easier to turn a tight nut if the spanner has a handle. This is because the moment of a force depends on the size of the force and the distance of the force from the (turning point). Moments turn in either a clockwise or direction. Moments balance if the clockwise moment is to the anti-clockwise moment.

2. Use the equation for moment to calculate the moment produced by a 10 N force acting at 2 m from a pivot. Write down the equation, show all working out and include units in your answer.

$$\text{moment} = \text{force} \times \text{distance from pivot}$$

3. Jon is trying to loosen a tight nut using a spanner of length 0.5 m. A moment of 40 Nm is needed to move the nut. What is the smallest force he can apply to do the job?
4. The diagram shows a balanced see-saw. Weights of 2 N, 3 N and 5 N are placed as shown and they balance exactly.



Find the position of the 5 N weight. Show all your working.