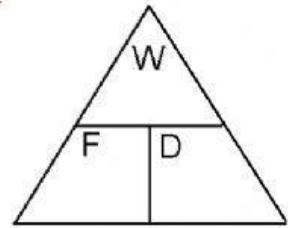Work has a special meaning in science. It is the product of the force applied to an object and the distance the object moves. The unit of work is the joule (J).
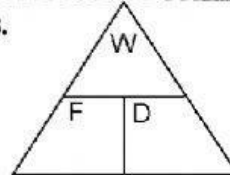
W = Force x Distance

W = F x d

Force = newtons
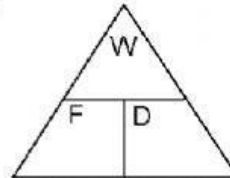
Distance = meters

Solve the following problems.

1. A book weighing 1.0 newton is lifted 2 meters. How much work was done?
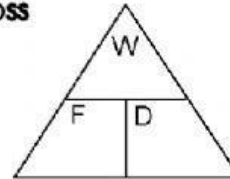
Answer   Units

_____ J N m

2. A force of 15 newtons is used to push a box along the floor a distance of 3 meters. How much work was done?

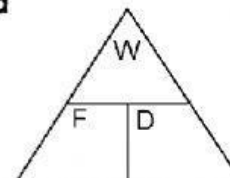Answer   Units

_____ J N m

3. It took 50 joules to push a chair 5 meters across the floor. With what force was the chair pushed?
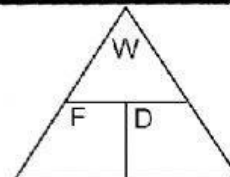
Answer   Units

_____ J N m

4. A force of 100 newtons was necessary to lift a rock. A total of 150 joules of work was done. How far was the rock lifted?
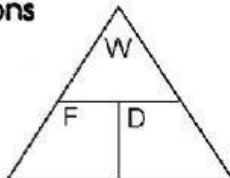
Answer   Units

_____ J N m

5. It took 500 newtons of force to push a car 4 meters. How much work was done?

Answer   Units

_____ J N m

6. A young man exerted a force of 9,000 newtons on a stalled car but was unable to move it. How much work was done?

Answer   Units

_____ J N m