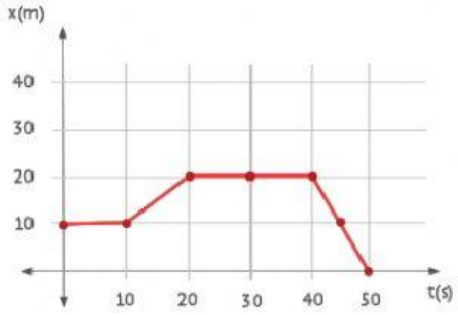
Physics – Forces and motion

1. The speed of a 800 Hg cart changes from 10m/s to 44m/s in just 8 seconds. What is the force acting on the cart?

2. A man has a weight of 264 N on the Moon.
a) What would be his weight on The Earth?
b) What would be his mass on Mars?

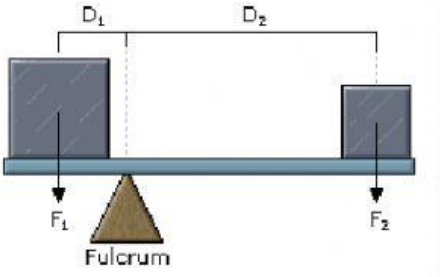
3. Calculate the force applied to a 3Kg cart in each section shown on the graph.



4. What is the magnitude of the force required to stretch a 30 cm-long spring, with a spring constant of 120 N/m, to a length of 15 cm?

5. What is the spring constant of a spring that needs a force of 5 N to be compressed from 50 cm to 35 cm?

6. We are trying to move a rock whose mass is 60.250 g with a bar which is 2.5 m long. How much force do we need to apply to move it if the fulcrum is 75 cm far from the rock? Identify the forces and distances on the drawing.



7. Calculate the force on an object that has a weight of 120N and an acceleration of 4 m/s2.

8. Calculate the weight on the Moon and on Mars of a woman whose weight on the Earth is 637N.

9. The speed of a 5Kg cart changes from 52m/s to 25m/s. Calculate the force needed to change this speed.