



The National
Orthodox School
Shmaisani

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Subject: Physics

Title: Newton's 2nd law homework

Name:

Grade-Section: 9IB

Mark: ___/8

A car which has run out of petrol is being towed by a breakdown truck along a straight horizontal road. The truck has mass 1200 kg and the car has mass 800 kg. The truck is connected to the car by a horizontal rope. The truck's engine provides a constant driving force of 2400N. The resistances to motion of the truck and the car are modeled as constant and of magnitude 600 N and 400 N respectively.

- Draw the free body diagram of the truck. (1 mark)

- Draw the free body diagram of the car. (1 mark)

- Find the acceleration of the truck and the car. (3 marks)

- Find the tension in the rope. (3 marks)

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