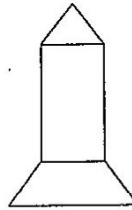


**PHY 111 Thrust force on a rocket**

Rockets are propelled upward by expelling gases downward. How does this work?

**A rocket is initially at rest and has a mass of 5000 kg. There is an upward thrust force of 200,000 N on the rocket.**

a) Draw force diagram for the rocket.



b) Find the net force and acceleration of the rocket.

c) What is the speed of the rocket after 20 seconds of thrust?

d) How high is the rocket after 20 seconds of thrust?

