

**1. Taylor, Problem 3.10**

Consider a rocket (initial mass  $m_0$  accelerating from rest in free space). At first, as it speeds up, its momentum  $p$  increases, but as its mass  $m$  decreases  $p$  eventually begins to decrease. For what value of  $m$  is  $p$  maximum?

Initial momentum  $p_0 = m_0 v_0 = 0$