Exam I*  

Multiple Choice: 1. (a), (b) and (e)  
2. (a)-(ii), (b)-(iii) and (c)-(i)  

Short answers: 1. \( \Delta y_{\text{Jupiter}} = 1.3h \)  
2. No. The weight of the boxer decreases since \( W = mg \) and \( g \) is \( 1/6 \)th that of Earth. But, his mass and inertia stays the same; changing his direction of motion requires just as large a force and so is just as difficult (moreso, in fact, since you’re \( \hat{n} \) is smaller and hence friction to grip the ground with is smaller).  

Problem 1: (a) \( \ddot{a} = 3.5 \text{ m/s}^2 \hat{y} \)  (b) \( y = 37.0 \text{ km} \)  (c) \( v = 0 \) and \( a = -9.8 \text{ m/s}^2 \)  

 Problem 2: (a) \( v_0 = 18.7 \text{ m/s} \)  (b) \( t = 2.4 \text{ s} \)  

Problem 3: (a) \( F \)  

 Problem 4: (a) \( \theta = +61^\circ \)  (b) \( \vec{v}_{P/I} = 9.58 \text{ m/s} \) in direction 48.1° above \( \hat{x} \)