Describing Motion: Velocity

Chpt 3 rev 5

Following the basic problem solving approach to solve the following problems: List all data including vector diagrams, list type motion, choose appropriate formula and list it, insert values into formula, and solve problem. All steps must be included to get full credit. Remember, acceleration due to gravity is -9.81 m/s^2

1. A car passes a slower driver and goes from 55 km/hr to 77 km/hr is 2.5 seconds. A) What is its acceleration? B) How far did it go during acceleration?

2. Bad Billy throws Eli upward at 33 km/hr. a) How high does he go? b) How long does it take him (Eli) to get to the top of his flight?

3. A ball falls off a cliff and hits the ground 2.7 seconds later. A) What velocity does the ball hit the ground at?…b) How high is the cliff?

4. A rubber-band is pulled back 33.0 cm and then let go. A) How long did it take (to leave your hand) if it leaves your hand at 14.0 m/s?…b) What is the acceleration does it have?.... c) How high would it go if it were shot straight up and there is no air resistance.