**Physics**

**FA 2.4 – Free Fall Kinematics**

Name

Circle your answers, and label them with units. Ignore air friction and use the convention that down is negative. g = 9.8 m/s/s

1-3: An air rocket is launched vertically upward at a velocity of 28.0 m/s.

1. What time will it take to reach the top? What is the greatest height it reaches? What total time will it be in the air?

(2.86 s, 40.0 m, 5.71 s)

2. What will be its position 4.20 s after it is launched? (31.2 m)

3. What will be its velocity 4.20 s after it is launched? (-13.2 m/s)

4-5: A rock drops off of a cliff that is 24 m tall

4. What time does it take to reach the ground? What is its velocity of impact? (careful of the sign) (2.21 s, -21.7 m/s)

5. What is its velocity and position at 1.75 seconds? (-17.15 m/s, -15.0 m)