**IB Physics**

**FA 2.4.2 – Free Fall Kinematics**

Name

Round to the correct significant figures, circle your answers, and label them with units. Ignore air friction and use the convention that down is negative. g = 9.81 m/s/s

1-3: A baseball is popped straight upwards, and is caught at the same elevation from which it is launched. It goes to a maximum height of 32.0 m before coming down.

1. What was its initial velocity leaving the ground? (25.1 m/s)

2. What is its displacement 3.00 s after it leaves the ground? (31.0 m)

3. What time will it take from when it is launched to when it reaches an elevation of 24.0 m on the way down? (3.83 s)

4-5: A ball is thrown downward from the top of a 35.2 m tall bridge at a velocity of -8.41 m/s.

4. With what velocity will it strike the ground? (-27.6 m/s)

5. What time will it take to reach the ground? (1.96 s)