**IB Physics**

**FA 2.4.3 – 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 projectile is launched upwards at 34.2 m/s, and lands at the same elevation from which it was launched.

1. To what height does it rise before going back down again? (59.6 m)

2. What time does it take to reach the very highest point? (3.49 s)

3. What time elapses between release, and the object being 40.0 m above the release point on the way down? (5.49 s)

4-5: An air rocket is launched upwards at 24.0 m/s. It goes up, and on the way down it strikes a giant lizard that is at an elevation of 17.5 m.

4. With what velocity does it strike the Giant Lizard? (on the way down) (-15.3 m/s)

5. What is its displacement 3.50 seconds after it is launched? (23.9 m)