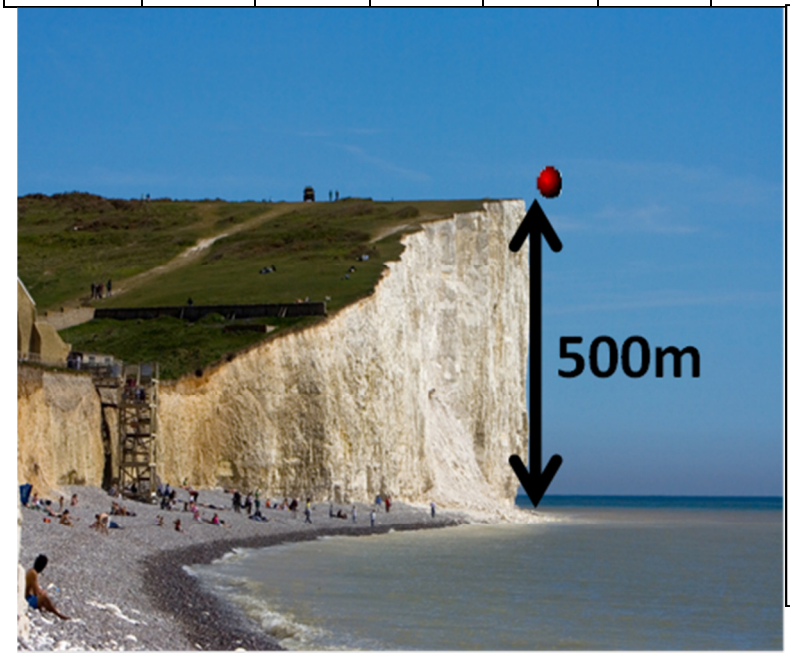
Falling Objects

Instructions:

- **Use kinematic equations to complete the table.**
- **Show all your calculations**
- **Answer questions on the back**

	y@1 sec	V@1 sec	y@2 sec	V@2 sec	y@3 sec	V@ 3 sec	y@ 4 sec	V@4 sec	Time to bottom	V @ bottom
Scenerio I										
Scenerio II										
Scenerio III										



Scenerio I: Ball is "dropped" V_0 = 0 m/s

Scenerio II: V_0 = -20 m/s

Scenerio III: V_0 = +20 m/s

$Y = Y_0 + V_0 + (-5)t^2$

$V = V_0 + (-10)t$

1. **Where is Y_0?**
2. **What is Y_0?**
3. **What is Y at the bottom? (Careful!!!)**

Analysis Questions

1. **At t=1s, what is the direction of each ball?**

2. **At t=2 s, what is the direction of each ball?**

3. **At t=3 s, what is the direction of each ball?**

4. **Look at the velocities for all the times, what pattern can you see, or is there any pattern to how the velocities change?**

5. **Which ball hits the bottom with the greatest velocity?**

6. **Explain why this happens.**