Freefall Report
by Adam Abad

1) A boy throws a ball upward with an initial velocity of 10 m/s. His hand is 1 meter above the ground when the ball leaves his hand.

a) When will the ball strike the ground? **2.1 seconds**

b) With what velocity does it strike the ground? **-10.58 meters/second**

c) What is the maximum height achieved of the ball? **6.1 meters**

d) How many seconds after it leaves the boys hand does it reach this max height? **1 second**

Time	Height	Velocity
0	1	10
0.1	1.951	9.02
0.2	2.804	8.04
0.9	6.031	1.18
1	6.1	0.2
1.1	6.071	-0.78
2	1.4	-9.6
2.1	0.391	-10.58
2.2	-0.716	-11.56

2) An automobile is pushed off of a cliff 100 meters high.

a) How long does it take before it reaches the ground? **4.5 seconds**

b) How fast is the car moving when it strikes the ground? **-44.1 meters/second**

Time	Height	Velocity
0	100	0
0.1	99.951	-0.98
0.2	99.804	-1.96
4.4	5.136	-43.12
4.5	0.775	-44.1
4.6	-3.684	-45.08

3) A stone is projected upward (initial height = 0 m) with a velocity of 125 m/s.

a) To what height will it rise? **797.184 meters**

b) How long will it take to reach that height? **12.8 seconds**

c) What will be the total time elapsed until it strikes the earth? **25.5 seconds**

d) How fast is the stone moving when it strikes the ground? **-124.9 meters/second**

Time	Height	Velocity
0	0	125
0.1	12.451	124.02
0.2	24.804	123.04
12.7	797.179	0.54
12.8	797.184	-0.44
12.9	797.091	-1.42
25.4	13.716	-123.92
25.5	1.275	-124.9
25.6	-11.264	-125.88