Extra Help Falling bodies solutions

1. Ball dropped from rest falls 5 m
	1. N/A
	2. – 9.8 m/s/s
	3. h = ½ at2
	4. [2\*5/9.8] ½ = 1.01 s
2. Ball dropped from 6.6 m
	1. N/A
	2. h = ½ at2
	3. [2\*6.5/9.8]1/2 t = 1.15s
	4. vf = vo + at vf = 1.15\*9.8 = 11.3 m/s
3. ball vertically thrown at 22 m/s
	1. N/A
	2. Decrease velocity at a constant rate until it stops briefly and fall toward the ground
	3. Final velocity will be = 0 at the top.
	4. Eq vf2 = vo2 + 2aΔx; 222 = 19.6 Δx; Δx = 24.7 m
	5. Eq vf = vo + at; 22/9.8 = 2.24 s
4. Vertically up from 5.0 m tower
	1. N/A
	2. Eq vf = vo + at; 15/9.8 = 1.53 s
	3. Eq vf2 = vo2 + 2aΔx; 152/19.6 = 11.4 m above throw so 16.4 m above ground.
	4. Eq h = ½ at2; [2\*16.4/9.8]1/2 = 1.80 s
	5. Eq vf = vo + at; -9.8\*1.80 = – 17.4 m/s
	6. Total time = 1.53 up + 1.80 down = 3.33 s