NAME_____
Gravity and constant acceleration

If an object is thrown up and falls down then:

Time up = Time down = half entire time.
Dis at bottom is 0.
V at top = 0
Vi up = -Vf down

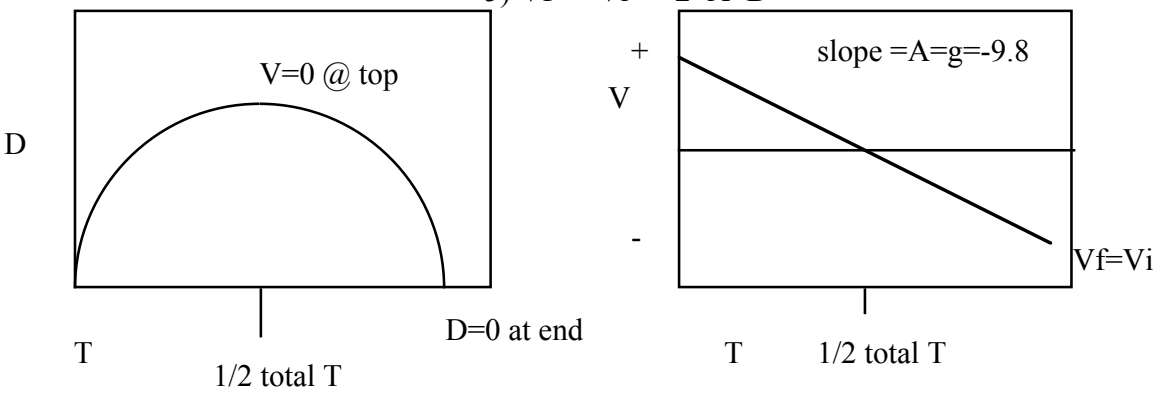
1) $D = \frac{(Vi+Vf)}{2} * T$

2) $Vavg = \frac{(Vi+Vf)}{2}$

3) $Vf = Vi + A*T$

4) $D = Vi*T + \frac{1}{2}*A*T^2$

5) $Vf^2 = Vi^2 + 2*A*D$



G Problems:

1) If I throw up a baseball straight into the air at 8 m/s, (assume g=-9.8)
   a)what is its velocity at the top of its journey?

   b) How much time does it take to go all the way up?

   c) How much time does it take to go down?

   d) What is its final velocity when it hits the ground?

2) A pebble is dropped down a well and hits the ground 1.5 seconds later. What is the displacement from the edge of the well to the waters surface?

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3) A gymnast is practicing a dismount from the high bar that is 4 meters off the ground, and swings up with a velocity of + 4 m/s . How fast will she be going when she hits the ground?

4) I drop a meterstick and catch it at the 32 cm mark. What is my reaction time?

5) I jump straight up and hit the ground 3 seconds later.
How fast was I going when I started?

What is the total DISTANCE I traveled (not displacement)

6) A robot probe drops a camera off the rim of a 24 km deep crater on Mars, where the free fall acceration is -3.7 m/s^2 .
Find the time required for the camera to reach the crater floor and the velocity with which it hits.

Sketch the distance time and velocity time graph as compared to Earth.