Testing Constructor

We need to make sure that the start conditions are calculated correctly based on altitude and angle.

We have a display() method that will print to the screen the values of some of our private variables. The calculations have been configured such that the time interval between frames is set to one second, for simplicity. This helps verify the results when comparing them to the Whiteboard demo provided last week, which is the first test case.

NOTE: each output is calculated using a setter function!!! This means in addition to testing the Constructor, these test cases are testing 11 additional setter functions.

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| Test Name | Input | Output |
| Whiteboard demo | Altitude: 0, angle: 30 | dx: 413.5  dy: 716.203  ro: 1.225  gravity: 9.807  speed of sound: 340  mach: 2.43235  c: 0.25954  drag: 2048.6  acceleration: 43.8673  ddx: -21.9336  ddy: -47.7972 |
| Altitude in data tables | Altitude: 1000, angle 30 | dx: 413.5  dy: 716.203  ro: 1.112  gravity: 9.804  speed of sound: 336  mach: 2.46131  c: 0.257565  drag: 1845.48  acceleration: 39.5178  ddx: -19.7589  ddy: -44.0274 |
| Interpolation needed | Altittude: 1500, angle 30 | dx: 413.5  dy: 716.203  ro: 1.0595  gravity: 9.8025  speed of sound: 334  mach: 2.47605  c: 0.25656  drag: 1751.49  acceleration: 37.5052  ddx: -18.7526  ddy: -42.2829 |
| Input zeros | Altitude: 0, angle: 0 | dx: 0  dy: 827  ro: 1.225  gravity: 9.807  speed of sound: 340  mach: 2.43235  c: 0.25954  drag: 2048.6  acceleration: 43.8673  ddx: -0  ddy: -53.6743 |
| Max Altitude | Altitude: 80,000, angle: 30 | dx: 413.5  dy: 716.203  ro: 1.85e-05  gravity: 9.73  speed of sound: 324  mach: 2.55247  c: 0.25135  drag: 0.0299618  acceleration: 0.00064158  ddx: -0.00032079  ddy: -9.73056 |
| Side Shot | Altitude: 0, angle: 90 | dx: 827  dy: 0  ro: 1.225  gravity: 9.807  speed of sound: 340  mach: 2.43235  c: 0.25954  drag: 2048.6  acceleration: 43.8673  ddx: -43.8673  ddy: -9.807 |