**Chapter 7 - Circular Motion and Gravity**

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| **Circular Motion:**       | Symbols and units:*F* - force (N)*m* - mass (kg) (g/1000 = kg)*a* - acceleration (m/s/s)*μ* - coefficient of friction *v* - tangential velocity (m/s)*T* - period (s)   |
| **Vertical Circle:**Top: 1g – ride Bottom: 1g + ride(m/s/s) ÷ 9.8 = (“g”s)(“g”s ) x 9.8 = (m/s/s) | Inverted “g”s are negative1 “g” = 9.8 m/s/sa > 9.8 for water to stay in the bucket etc. |
| **Gravity:***G* - Universal Gravitation Constant  (6.67x10-11 Nm2/kg2) | Symbols and units:*F* - force (N)*m1* - the first mass (kg) *m2* - the second mass (kg) *r* - distance separating the centers (m)*G* - Universal Gravitation Constant  (6.67x10-11 Nm2/kg2) |
| **Orbit: (r, m, v): Orbit: (r, m, T):** Note: - the satellite mass cancels if ms << mc.    | Symbols and units:*mc* - central body mass (kg) *ms* - satellite mass (kg) *v* - orbital velocity (m/s)*r* - orbital radius (m)*T* - period (s) *G* - Universal Gravitation Constant  (6.67x10-11 Nm2/kg2) |