Answer on Question #48289, Physics, Mechanics | Dynamics | Kinematics

we know if u go upper from earth the acceleration due to gravity decreases and increases when we move from upper to earth. if a lift moves up with 2 m/s^2 acceleration then why the neat acceleration is (g+a)=(g+2) here. the lift goes up from earth so the g should decrease. but why it increase here.please explain.

If we go upper from earth the acceleration due to gravity decreases only if the distance is ~ Earth's radius. For small movements we can assume that it's a constant. If a lift moves up with acceleration, by the second Newton's law:

$$N - mg = ma \rightarrow N = m(g + a)$$

Where N is a weight of an object.

In this case this will be the same the same force as an object is in a gravity with $(g + a)$.

However, it doesn't mean that the acceleration due to gravity is changed. The force is increased, total acceleration is increased, but not the acceleration due to gravity.