

Definition imagine all The center of mass is the point at which we can object to be concentrated. Lan ponaa the mass of an Alhameed Thus, the center of mass is also the point at which we can imagine the force of gravity acting on the entire object to be concentrated. If we can imagine all of the mass to be concentrated at this point when calculating the force due to gravity, it is legitimate to call this point the center of gravity, a term that can often be used interchangeably with to othe center of mass. (To be precise, we should note that these two terms are only equiva-lent in situations where the gravitational force is constant everywhere throughout the object. In Chapter 12, we will see that this is not the case for very large objects.) T 4 It is appropriate to mention here that if an object's mass density is constant, the center of mass (center of gravity) is located in the geometrical center of the object. Thus, for most objects in everyday experience, it is a reasonable first guess that the center of gravity is the middle of the object. The derivations in this chapter will bear out this conjecture. Ms. Asmaa Alhameed