



ACROSS

- 4 The _____ force is the component, perpendicular to the surface of contact, of the contact force exerted by the surface.
- 11 The _____ force is the external force required to make a body follow a circular path at constant speed. The force is directed inward, toward the center of the circle.
- 13 _____ Galilei was an Italian physicist, mathematician, astronomer, and philosopher who achieved the first systematic studies of uniformly accelerated motion, improved the telescope and supported Copernicanism.
- 14 A _____ force or interaction is a mechanism by which particles interact with each other and which cannot be explained in terms of another interaction.
- 17 _____ is a measurement of the gravitational force acting on an object.
- 19 The _____ is the SI derived unit of force.

DOWN

- 1 _____ is the property of an object to remain at constant velocity unless acted upon by an outside force.
- 2 _____ is a fundamental concept in physics, roughly corresponding to the intuitive idea of how much matter there is in an object.
- 3 Newton's third law states that forces occur in pairs, one called the action and the other the _____.

- 5 _____ is the force that opposes the relative motion or tendency toward such motion of two surfaces in contact.
- 6 A _____ force is a force between two objects that are touching each other.
- 7 The _____ of friction is a dimensionless quantity used to calculate the force of friction (static or kinetic).
- 8 _____ is anything that can cause a massive body to accelerate. It may be experienced as a lift, a push, or a pull.
- 9 _____ friction is when two solid surfaces slide against each other.
- 10 _____ is the branch of classical mechanics that is concerned with the effects of forces on the motion of objects.
- 12 A _____ frame of reference is one in which Newton's first and second laws of motion are valid, ie. that is neither rotating nor accelerated.
- 15 Newton's laws of _____ are three physical laws which provide relationships between the forces acting on a body and its movement through space.
- 16 Sir Isaac _____ was an English scientist whose treatise *Philosophiae Naturalis Principia Mathematica*, published in 1687, described universal gravitation and the three laws of motion.
- 18 A resultant or _____ force is a vector produced when two or more forces act upon a single object.