Common Forces

Force	Direction	When Does It Appear?	Equation
Gravity	Towards the center of the other object	Whenever two objects with mass are next to each other (Can usually be ignored unless the mass is large)	Near Earth's surface Fg = mg $F = G\frac{m_1 m_2}{r^2}$
Normal	Perpendicular to the surface	Whenever an object is touching a surface	Solve for the forces in the y direction
Tension	Whatever way the rope / string is oriented	Whenever a rope / string / chain is taut and "pulling" on an object	Solve for the forces in the x and y direction and add the components using a^2 + b^2 = c^2
Friction	Opposite to the acceleration along the surface	Whenever an object is experiencing ANY force parallel to the surface (unless the surface's friction is negilible)	Fs <= μs*N Fk = μk*N
Spring	Along the spring	Whenever a spring is stretched or compressed	F = -k*x