### Key Equations

|  |  |
| --- | --- |
| Angular position |  |
| Angular velocity |  |
| Tangential speed |  |
| Angular acceleration |  |
| Tangential acceleration |  |
| Average angular velocity |  |
| Angular displacement |  |
| Angular velocity from constant angular acceleration |  |
| Angular velocity from displacement and constant angular acceleration |  |
| Change in angular velocity |  |
| Total acceleration |  |
| Rotational kinetic energy |  |
| Moment of inertia |  |
| Rotational kinetic energy in terms of the moment of inertia of a rigid body |  |
| Moment of inertia of a continuous object |  |
| Parallel-axis theorem |  |
| Moment of inertia of a compound object |  |
| Torque vector |  |
| Magnitude of torque |  |
| Total torque |  |
| Newton’s second law for rotation |  |
| Incremental work done by a torque |  |
| Work-energy theorem |  |
| Rotational work done by net force |  |
| Rotational power |  |