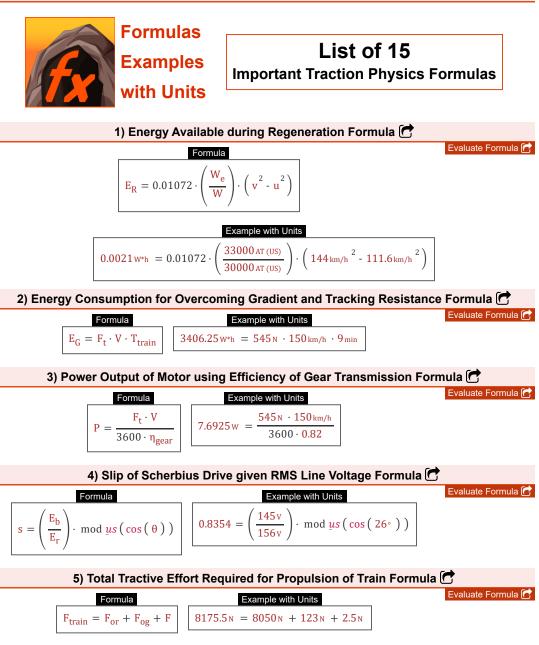
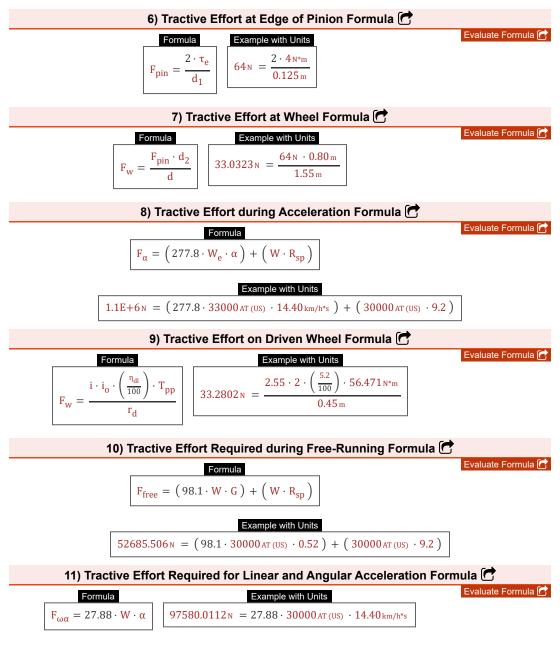
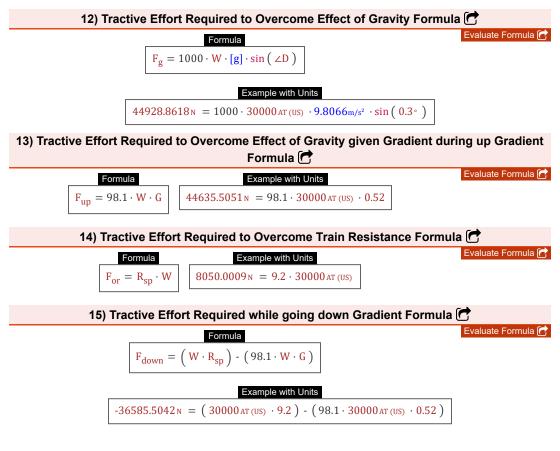
Important Traction Physics Formulas PDF









Variables used in list of Traction Physics Formulas above

- ∠ D Angle D (Degree)
- d Diameter of Wheel (Meter)
- d₁ Diameter of Pinion 1 (Meter)
- d₂ Diameter of Pinion 2 (Meter)
- Eb Back Emf (Volt)
- E_G Energy Consumption for Overcoming Gradient (Watt-Hour)
- Er RMS Value of Rotor Side Line Voltage (Volt)
- E_R Energy Consumption during Regeneration (Watt-Hour)
- F Force (Newton)
- Fdown Down Gradient Tractive Effort (Newton)
- Free Run Tractive Effort (Newton)
- **F**_a Gravity Tractive Effort (Newton)
- Fog Gravity Overcome Tractive Effort (Newton)
- F_{or} Resistance Overcome Tractive Effort (Newton)
- Fpin Pinion Edge Tractive Effort (Newton)
- Ft Tractive Effort (Newton)
- Ftrain Train Tractive Effort (Newton)
- Fup Tractive Effort of Up Gradient (Newton)
- Fw Wheel Tractive Effort (Newton)
- F_{α} Acceleration Tractive Effort (Newton)
- F_{ωα} Angular Accelration Tractive Effort (Newton)
- G Gradient
- i Gear Ratio of Transmission
- i_o Gear Ratio of Final Drive
- P Power Output Train (Watt)
- rd Effective Radius of Wheel (Meter)
- R_{sp} Specific Resistance Train
- Slip
- T_{pp} Torque Output from Powerplant (Newton Meter)

Constants, Functions, Measurements used in list of Traction Physics Formulas above

- constant(s): [g], 9.80665 Gravitational acceleration on Earth
- Functions: cos, cos(Angle) Cosine of an angle is the ratio of the side adjacent to the angle to the hypotenuse of the triangle.
- Functions: modulus, modulus Modulus of a number is the remainder when that number is divided by another number.
- Functions: sin, sin(Angle) Sine is a trigonometric function that describes the ratio of the length of the opposite side of a right triangle to the length of the hypotenuse.
- Measurement: Length in Meter (m)
 Length Unit Conversion
- Measurement: Weight in Ton (Assay) (US) (AT (US))
 - Weight Unit Conversion 🕝
- Measurement: Time in Minute (min) Time Unit Conversion
- Measurement: Speed in Kilometer per Hour (km/h)
 - Speed Unit Conversion 🕝
- Measurement: Acceleration in Kilometer per Hour Second (km/h*s) Acceleration Unit Conversion
- Measurement: Energy in Watt-Hour (W*h) Energy Unit Conversion
- Measurement: Power in Watt (W) Power Unit Conversion
- Measurement: Force in Newton (N)
 Force Unit Conversion
- Measurement: Angle in Degree (°) Angle Unit Conversion
- Measurement: Electric Potential in Volt (V) Electric Potential Unit Conversion
- Measurement: Torque in Newton Meter (N*m) Torque Unit Conversion



- Ttrain Time Taken by Train (Minute)
- u Initial Velocity (Kilometer per Hour) •
- **V** Final Velocity (Kilometer per Hour)
- Velocity (Kilometer per Hour)
- W Weight of Train (Ton (Assay) (US))
- We Accelerating Weight of Train (Ton (Assay) (US))
- α Acceleration of Train (Kilometer per Hour Second)
- **n**dl Efficiency of Driveline
- ngear Gear Efficiency
- **θ** Firing Angle (Degree)
- Te Engine Torque (Newton Meter)



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