



Stopping Sight Distance Formulas

Calculators!

Examples!

Conversions!

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List of 12 Stopping Sight Distance Formulas

Stopping Sight Distance 🗗

1) Braking Distance given Lag Distance and Stopping Sight Distance



$$l = SSD - LD$$

Open Calculator

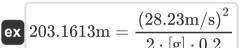
Open Calculator



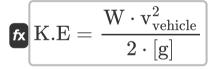
2) Braking Distance of Vehicle during Braking Operation 💪



$$l = rac{ ext{v}_{ ext{vehicle}}^2}{2 \cdot [ext{g}] \cdot ext{f}}$$







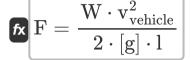




| = 13.4 m = 61.4 m - 48 m

LD = SSD - l

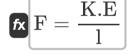
5) Maximum Frictional Force Developed during Braking Operation of Vehicle



Open Calculator

Open Calculator 2

- $= \frac{230 \text{kg} \cdot (28.23 \text{m/s})^2}{2 \cdot [\text{g}] \cdot 48 \text{m}}$
- 6) Maximum Frictional Force given Kinetic Energy of Vehicle at Design Speed

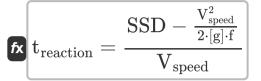


Open Calculator G

$$25 \mathrm{N} = \frac{1200 \mathrm{J}}{48 \mathrm{m}}$$



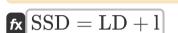
7) Reaction Time given Stopping Sight Distance and Vehicle Velocity



Open Calculator 🚰

ex $7.170507 \mathrm{s} = rac{61.4 \mathrm{m} - rac{(6.88 \mathrm{m/s})^2}{2 \cdot [\mathrm{g}] \cdot 0.2}}{6.88 \mathrm{m/s}}$

8) Stopping Sight Distance given Lag Distance and Braking Distance



Open Calculator

 $|82.7 \mathrm{m} = 34.7 \mathrm{m} + 48 \mathrm{m}$

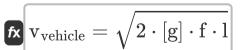
9) Stopping Sight Distance given Vehicle Velocity and Reaction Time of Vehicle

 $ext{SSD} = ext{V}_{ ext{speed}} \cdot ext{t}_{ ext{reaction}} + rac{ ext{V}_{ ext{speed}}^2}{2 \cdot [ext{g}] \cdot ext{f}}$

Open Calculator

 $oxed{ex} 80.86691 \mathrm{m} = 6.88 \mathrm{m/s} \cdot 10 \mathrm{s} + rac{(6.88 \mathrm{m/s})^2}{2 \cdot [\mathrm{g}] \cdot 0.2}$

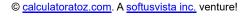
10) Velocity of Vehicle given Braking Distance after Braking Operation



Open Calculator 🗗

 $oxed{ex} 13.7218 ext{m/s} = \sqrt{2 \cdot ext{[g]} \cdot 0.2 \cdot 48 ext{m}}$







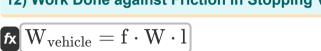
11) Weight of Vehicle given Kinetic Energy of Vehicle at Design Speed 🛂



Open Calculator 2

 $extbf{ex} 275.2492 ext{kg} = rac{2 \cdot [ext{g}] \cdot 233 ext{N} \cdot 48 ext{m}}{\left(28.23 ext{m/s}
ight)^2}$

12) Work Done against Friction in Stopping Vehicle



Open Calculator

 $2208J = 0.2 \cdot 230 \text{kg} \cdot 48 \text{m}$



Variables Used

- f Coefficient of Friction
- **F** Maximum Frictional Force (Newton)
- K.E Kinetic Energy of Vehicle at Design Speed (Joule)
- I Braking Distance (Meter)
- LD Lag Distance (Meter)
- SSD Sight Stopping Distance (Meter)
- treaction Reaction Time (Second)
- V_{speed} Vehicle Speed (Meter per Second)
- Vvehicle Velocity (Meter per Second)
- W Total Weight of Vehicle (Kilogram)
- W_{vehicle} Work done against Friction (Joule)





Constants, Functions, Measurements used

- Constant: [g], 9.80665 Meter/Second²

 Gravitational acceleration on Farth
- Function: sqrt, sqrt(Number) Square root function
- Measurement: Length in Meter (m)
 Length Unit Conversion
- Measurement: Weight in Kilogram (kg)
 Weight Unit Conversion
- Measurement: Time in Second (s)

 Time Unit Conversion
- Measurement: Speed in Meter per Second (m/s)
 Speed Unit Conversion
- Measurement: Energy in Joule (J)

 Energy Unit Conversion
- Measurement: Force in Newton (N)
 Force Unit Conversion





Check other formula lists

- Overtaking Sight Distance
 Stopping Sight Distance Formulas
- Formulas

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