



calculatoratoz.com



unitsconverters.com

Load on Wheels in Race Cars Formulas

Calculators!

Examples!

Conversions!

Bookmark calculatoratoz.com, unitsconverters.com

Widest Coverage of Calculators and Growing - **30,000+ Calculators!**
Calculate With a Different Unit for Each Variable - **In built Unit Conversion!**
Widest Collection of Measurements and Units - **250+ Measurements!**

Feel free to SHARE this document with your friends!

[Please leave your feedback here...](#)



List of 13 Load on Wheels in Race Cars Formulas

Load on Wheels in Race Cars

1) Front Lateral Load Transfer given Load on Front Inside Wheel in Cornering

$$fx \quad W_F = W - W_i$$

[Open Calculator !\[\]\(a870788d6ed9b8fd294b7654a8c8526b_img.jpg\)](#)

$$ex \quad 60kg = 460kg - 400kg$$

2) Front Lateral Load Transfer given Load on Front Outside Wheel in Cornering

$$fx \quad W_F = W' - W$$

[Open Calculator !\[\]\(c50c8b7b2cc2cf9ff925edec0ee94c0d_img.jpg\)](#)

$$ex \quad 226kg = 686kg - 460kg$$

3) Maximum Speed of Vehicle

$$fx \quad V_{\max} = \frac{\pi \cdot n_{p \max} \cdot r_d}{30 \cdot i_o \cdot i_g \min}$$

[Open Calculator !\[\]\(f60b7a900783ac3fd531bfd9c111be6d_img.jpg\)](#)

$$ex \quad 157.0164m/s = \frac{\pi \cdot 35000rev/min \cdot 0.45m}{30 \cdot 2 \cdot 0.55}$$



4) Rear Lateral Load Transfer given Load on Rear Inside Wheel in Cornering

$$fx \quad W_F = W - W_i$$

[Open Calculator !\[\]\(cbe80b694ebd74fcfe136a095b608235_img.jpg\)](#)

$$ex \quad 60kg = 460kg - 400kg$$

5) Rear Lateral Load Transfer given Load on Rear Outside Wheel in Cornering

$$fx \quad W_R = W' - W$$

[Open Calculator !\[\]\(3e2231b1ad3ca8da8658228c00dd08e0_img.jpg\)](#)

$$ex \quad 226kg = 686kg - 460kg$$

6) Wheel Load on Front Inside Wheel during Cornering

$$fx \quad W' = W - W_F$$

[Open Calculator !\[\]\(0d5ec72f61334709c3fc9450209b754f_img.jpg\)](#)

$$ex \quad 234kg = 460kg - 226kg$$

7) Wheel Load on Front Inside Wheel in Static Condition given Load during Cornering

$$fx \quad W = W' + W_F$$

[Open Calculator !\[\]\(b64b40baaee5acddc1eab8538ba84754_img.jpg\)](#)

$$ex \quad 912kg = 686kg + 226kg$$

8) Wheel Load on Front Outside Wheel during Cornering

$$fx \quad W' = W + W_F$$

[Open Calculator !\[\]\(aff7c69c44a5e015f18c35867ef3f5c3_img.jpg\)](#)

$$ex \quad 686kg = 460kg + 226kg$$



9) Wheel Load on Front Outside Wheel in Static Condition given Load during Cornering

$$fx \quad W = W' - W_F$$

[Open Calculator !\[\]\(e78f798d4ea5c530c9db49e7d26e6b95_img.jpg\)](#)

$$ex \quad 460kg = 686kg - 226kg$$

10) Wheel Load on Rear Inside Wheel during Cornering

$$fx \quad W' = W - W_R$$

[Open Calculator !\[\]\(05be7c7a8995decd503647c99211f7c2_img.jpg\)](#)

$$ex \quad 298.13kg = 460kg - 161.87kg$$

11) Wheel Load on Rear Inside Wheel in Static Condition given Load during Cornering

$$fx \quad W = W' + W_R$$

[Open Calculator !\[\]\(fe3aebe81acea8d45108cd2768939da7_img.jpg\)](#)

$$ex \quad 847.87kg = 686kg + 161.87kg$$

12) Wheel Load on Rear Outside Wheel during Cornering

$$fx \quad W' = W + W_R$$

[Open Calculator !\[\]\(899d8b7697d64725bf017d3296cfcf1b_img.jpg\)](#)

$$ex \quad 621.87kg = 460kg + 161.87kg$$

13) Wheel Load on Rear Outside Wheel in Static Condition given Load during Cornering

$$fx \quad W = W' - W_R$$

[Open Calculator !\[\]\(40770d9ed6ed4f1222ebf89a1396e8b2_img.jpg\)](#)

$$ex \quad 524.13kg = 686kg - 161.87kg$$







Variables Used

- $i_{g \min}$ Minimum Gear Ratio of Transmission
- i_o Gear Ratio of Final Drive
- $n_{p \max}$ Speed of Engine at Maximum Power (*Revolution per Minute*)
- r_d Effective Radius of Wheel (*Meter*)
- V_{\max} Maximum Speed of Vehicle (*Meter per Second*)
- W Load on Individual Wheel in Static Condition (*Kilogram*)
- W' Individual Load Wheel during Cornering (*Kilogram*)
- W_F Front Lateral Load Transfer (*Kilogram*)
- W_i Individual Load on Inner Wheel during Cornering (*Kilogram*)
- W_R Rear Lateral Load Transfer (*Kilogram*)








Constants, Functions, Measurements used

- **Constant:** **pi**, 3.14159265358979323846264338327950288
Archimedes' constant
- **Measurement:** **Length** in Meter (m)
Length Unit Conversion 
- **Measurement:** **Weight** in Kilogram (kg)
Weight Unit Conversion 
- **Measurement:** **Speed** in Meter per Second (m/s)
Speed Unit Conversion 
- **Measurement:** **Angular Velocity** in Revolution per Minute (rev/min)
Angular Velocity Unit Conversion 



Check other formula lists

- [Rates for Axle Suspension in Race Car Formulas](#) 
- [Ride Rate and Ride Frequency for Race Cars Formulas](#) 
- [Vehicle Cornering in Race Cars Formulas](#) 
- [Weight Transfer during Braking Formulas](#) 
- [Wheel Centre Rates for Independent Suspension Formulas](#) 

Feel free to SHARE this document with your friends!

PDF Available in

[English](#) [Spanish](#) [French](#) [German](#) [Russian](#) [Italian](#) [Portuguese](#) [Polish](#) [Dutch](#)

11/9/2023 | 4:19:55 AM UTC

[Please leave your feedback here...](#)

