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Anti Geometry of Independent Suspension Formulas

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List of 17 Anti Geometry of Independent Suspension Formulas

Anti Geometry of Independent Suspension ⬈

1) Angle between IC and Ground ⬈

Open Calculator ⬈

fx $\Phi R = a\tan\left(\dfrac{\text{SVSA}_h}{\text{SVSA}_l}\right)$

ex $18.43495° = a\tan\left(\dfrac{200\text{mm}}{600\text{mm}}\right)$

2) Camber Change Rate ⬈

Open Calculator ⬈

fx $\theta = a\tan\left(\dfrac{1}{\text{fvsa}}\right)$

ex $36.89742° = a\tan\left(\dfrac{1}{1332\text{mm}}\right)$

3) Front View Swing Arm ⬈

Open Calculator ⬈

fx $\text{fvsa} = \dfrac{\frac{a_{tw}}{2}}{1 - \text{RC}}$

ex $1332.667\text{mm} = \dfrac{\frac{1999\text{mm}}{2}}{1 - 0.25}$

4) Height of Centre of Gravity from Road Surface from Percentage Anti Dive ⤴

Open Calculator ⤴

$$fx \quad h = \frac{(\%B_f) \cdot \left(\frac{SVSA_h}{SVSA_l}\right) \cdot b}{\%AD_f}$$

$$ex \quad 10000mm = \frac{(60) \cdot \left(\frac{200mm}{600mm}\right) \cdot 1350mm}{2.7}$$

5) Height of Centre of Gravity from Road Surface from Percentage Anti Lift ⤴

Open Calculator ⤴

$$fx \quad h = \frac{(\%B_r) \cdot \left(\frac{SVSA_h}{SVSA_l}\right) \cdot b}{\%AL_r}$$

$$ex \quad 9870.438mm = \frac{(60.1) \cdot \left(\frac{200mm}{600mm}\right) \cdot 1350mm}{2.74}$$

6) Percent Anti Squat ⤴

Open Calculator ⤴

$$fx \quad \%AS = \left(\frac{\tan(\Phi R)}{\frac{h}{b}}\right) \cdot 100$$

$$ex \quad 4.498704 = \left(\frac{\tan(18.43°)}{\frac{10000mm}{1350mm}}\right) \cdot 100$$

7) Percentage Anti Dive on Front ⌖

Open Calculator ⤢

$$fx \quad \%AD_f = (\%B_f) \cdot \frac{\frac{SVSA_h}{SVSA_l}}{\frac{h}{b}}$$

$$ex \quad 2.7 = (60) \cdot \frac{\frac{200mm}{600mm}}{\frac{10000mm}{1350mm}}$$

8) Percentage Anti Lift ⌖

Open Calculator ⤢

$$fx \quad \%AL_r = (\%B_f) \cdot \frac{\frac{SVSA_h}{SVSA_l}}{\frac{h}{b}}$$

$$ex \quad 2.7 = (60) \cdot \frac{\frac{200mm}{600mm}}{\frac{10000mm}{1350mm}}$$

9) Percentage Front Braking given Percentage Anti Dive ⌖

Open Calculator ⤢

$$fx \quad \%B_f = \frac{\%AD_f}{\frac{\frac{SVSA_h}{SVSA_l}}{\frac{h}{b}}}$$

$$ex \quad 60 = \frac{2.7}{\frac{\frac{200mm}{600mm}}{\frac{10000mm}{1350mm}}}$$

10) Percentage Rear Braking given Percentage Anti Lift ⎘

Open Calculator ⎘

$$fx \quad \%B_r = \frac{\%AL_r}{\frac{\frac{SVSA_h}{SVSA_l}}{\frac{h}{b}}}$$

$$ex \quad 60.88889 = \frac{2.74}{\frac{\frac{200mm}{600mm}}{\frac{10000mm}{1350mm}}}$$

11) Roll Camber ⎘

Open Calculator ⎘

$$fx \quad RC = \frac{\theta c}{RA}$$

$$ex \quad 0.25 = \frac{2°}{8°}$$

12) Wheelbase of Vehicle from Percentage Anti Dive ⎘

Open Calculator ⎘

$$fx \quad b = \frac{\%AD_f}{(\%B_f) \cdot \frac{\frac{SVSA_h}{SVSA_l}}{h}}$$

$$ex \quad 1350mm = \frac{2.7}{(60) \cdot \frac{\frac{200mm}{600mm}}{10000mm}}$$

13) Wheelbase of Vehicle from Percentage Anti Lift 🔗

Open Calculator 🔗

$$\mathbf{fx}\ b = \frac{\%AL_r}{(\%B_f) \cdot \frac{\frac{SVSA_h}{SVSA_l}}{h}}$$

$$\mathbf{ex}\ 1370mm = \frac{2.74}{(60) \cdot \frac{\frac{200mm}{600mm}}{10000mm}}$$

Side View 🔗

14) Side View Swing Arm Height given Percentage Anti Dive 🔗

Open Calculator 🔗

$$\mathbf{fx}\ SVSA_h = \frac{\%AD_f}{(\%B_f) \cdot \frac{\frac{1}{SVSA_l}}{\frac{h}{b}}}$$

$$\mathbf{ex}\ 200mm = \frac{2.7}{(60) \cdot \frac{\frac{1}{600mm}}{\frac{10000mm}{1350mm}}}$$

15) Side View Swing Arm Height given Percentage Anti Lift 🔗

Open Calculator 🔗

$$\mathbf{fx}\ SVSA_h = \frac{\%AL_r}{(\%B_r) \cdot \frac{\frac{1}{SVSA_l}}{\frac{h}{b}}}$$

$$\mathbf{ex}\ 202.6253mm = \frac{2.74}{(60.1) \cdot \frac{\frac{1}{600mm}}{\frac{10000mm}{1350mm}}}$$

16) Side View Swing Arm Length given Percentage Anti Dive ⏏

Open Calculator ⏏

$$fx \quad \text{SVSA}_l = \frac{(\%B_f) \cdot \frac{\text{SVSA}_h}{\frac{h}{b}}}{\%AD_f}$$

$$ex \quad 600mm = \frac{(60) \cdot \frac{200mm}{\frac{10000mm}{1350mm}}}{2.7}$$

17) Side View Swing Arm Length given Percentage Anti Lift ⏏

Open Calculator ⏏

$$fx \quad \text{SVSA}_l = \frac{(\%B_r) \cdot \frac{\text{SVSA}_h}{\frac{h}{b}}}{\%AL_r}$$

$$ex \quad 592.2263mm = \frac{(60.1) \cdot \frac{200mm}{\frac{10000mm}{1350mm}}}{2.74}$$

Variables Used

- **%AD$_f$** Percentage Anti Dive Front
- **%AL$_r$** Percentage Anti Lift
- **%AS** %Anti Squat
- **%B$_f$** Percentage Front Braking
- **%B$_r$** Percentage Rear Braking
- **a$_{tw}$** Track Width of Vehicle *(Millimeter)*
- **b** Wheelbase of Vehicle *(Millimeter)*
- **fvsa** Front View Swing Arm *(Millimeter)*
- **h** Height of CG above Road *(Millimeter)*
- **RA** Roll Angle *(Degree)*
- **RC** Roll Camber
- **SVSA$_h$** Side View Swing Arm Height *(Millimeter)*
- **SVSA$_l$** Side View Swing Arm Length *(Millimeter)*
- **θ** Camber Change Rate *(Degree)*
- **θc** Camber Angle *(Degree)*
- **ΦR** Angle between IC and Ground *(Degree)*

Constants, Functions, Measurements used

- Function: **atan**, atan(Number)
  Inverse trigonometric tangent function

- Function: **tan**, tan(Angle)
  Trigonometric tangent function

- Measurement: **Length** in Millimeter (mm)
  Length Unit Conversion ⬈

- Measurement: **Angle** in Degree (°)
  Angle Unit Conversion ⬈

Check other formula lists

- **Anti Geometry of Independent Suspension Formulas** 🔗

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