



Important Formulas of Parallelepiped

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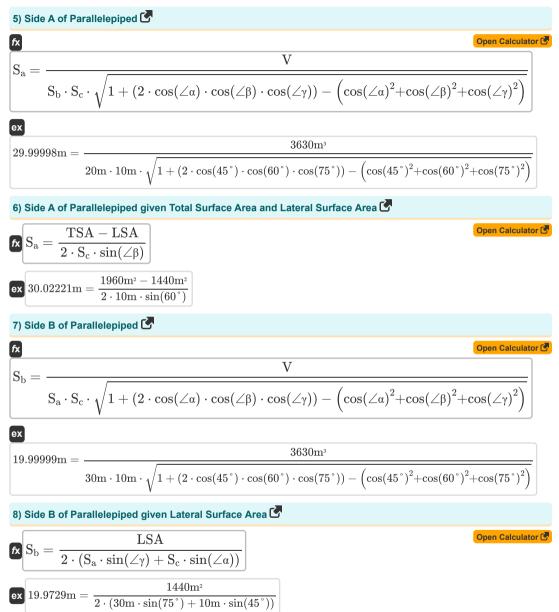


List of 16 Important Formulas of Parallelepiped

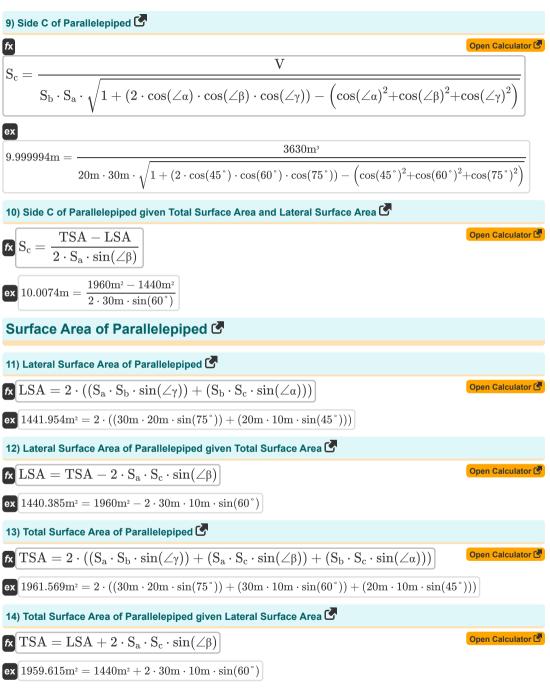
Important Formulas of Parallelepiped 🕑 Angle of Parallelepiped 🖸 1) Angle Alpha of Parallelepiped 🖸 Open Calculator $\boxed{\mathbf{k}} \angle \alpha = a \sin \left(\frac{\mathrm{TSA} - (2 \cdot \mathrm{S}_{\mathrm{a}} \cdot \mathrm{S}_{\mathrm{b}} \cdot \sin(\angle \gamma)) - (2 \cdot \mathrm{S}_{\mathrm{a}} \cdot \mathrm{S}_{\mathrm{c}} \cdot \sin(\angle \beta))}{2 \cdot \mathrm{S}_{\mathrm{c}} \cdot \mathrm{S}_{\mathrm{b}}} \right)$ $\exp\left[44.68305^{\circ} = a \sin\left(\frac{1960 \text{m}^2 - (2 \cdot 30 \text{m} \cdot 20 \text{m} \cdot \sin(75^{\circ})) - (2 \cdot 30 \text{m} \cdot 10 \text{m} \cdot \sin(60^{\circ}))}{2 \cdot 10 \text{m} \cdot 20 \text{m}}\right)\right]$ 2) Angle Beta of Parallelepiped 🖸 $egin{aligned} \kappa \ egin{aligned} & eta & = a \sinigg(rac{ ext{TSA} - (2 \cdot ext{S}_{ ext{a}} \cdot ext{S}_{ ext{b}} \cdot \sin(igta \gamma)) - (2 \cdot ext{S}_{ ext{b}} \cdot ext{S}_{ ext{c}} \cdot \sin(igta lpha))}{2 \cdot ext{S}_{ ext{a}} \cdot ext{S}_{ ext{c}}}igg) \end{aligned}$ Open Calculator $\boxed{\texttt{59.7017}^{\circ} = a \sin \left(\frac{1960 \text{m}^2 - (2 \cdot 30 \text{m} \cdot 20 \text{m} \cdot \sin(75^{\circ})) - (2 \cdot 20 \text{m} \cdot 10 \text{m} \cdot \sin(45^{\circ}))}{2 \cdot 30 \text{m} \cdot 10 \text{m}} \right)}$ 3) Angle Gamma of Parallelepiped Open Calculator 🕑 $\boxed{\mathbf{K}} \angle \gamma = a \sin \left(\frac{\mathrm{TSA} - (2 \cdot \mathrm{S}_{\mathrm{b}} \cdot \mathrm{S}_{\mathrm{c}} \cdot \sin(\angle \alpha)) - (2 \cdot \mathrm{S}_{\mathrm{a}} \cdot \mathrm{S}_{\mathrm{c}} \cdot \sin(\angle \beta))}{2 \cdot \mathrm{S}_{\mathrm{b}} \cdot \mathrm{S}_{\mathrm{a}}} \right)$ $\boxed{\mathbf{ex}} 74.71324^{\circ} = a \sin \left(\frac{1960 \mathrm{m}^2 - (2 \cdot 20 \mathrm{m} \cdot 10 \mathrm{m} \cdot \sin(45^{\circ})) - (2 \cdot 30 \mathrm{m} \cdot 10 \mathrm{m} \cdot \sin(60^{\circ}))}{2 \cdot 20 \mathrm{m} \cdot 30 \mathrm{m}} \right)$ Perimeter of Parallelepiped 4) Perimeter of Parallelepiped fx $\mathbf{P} = 4 \cdot (\mathbf{S_a} + \mathbf{S_b} + \mathbf{S_c})$ Open Calculator ex $240m = 4 \cdot (30m + 20m + 10m)$



Side of Parallelepiped 🗗









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Volume of Parallelepiped C

15) Volume of Parallelepiped \mathbb{C} \mathbb{C} Open Calculator \mathbb{C} $V = S_a \cdot S_b \cdot S_c \cdot \sqrt{1 + (2 \cdot \cos(\angle \alpha) \cdot \cos(\angle \beta) \cdot \cos(\angle \gamma)) - (\cos(\angle \alpha)^2 + \cos(\angle \beta)^2 + \cos(\angle \gamma)^2)}$ ex 3630.002m³ = 30m · 20m · 10m · $\sqrt{1 + (2 \cdot \cos(45^\circ) \cdot \cos(60^\circ) \cdot \cos(75^\circ)) - (\cos(45^\circ)^2 + \cos(60^\circ)^2 + \cos(75^\circ)^2)}$ 16) Volume of Parallelepiped given Total Surface Area and Lateral Surface Area \mathbb{C} \mathbb{C} $V = \frac{1}{2} \cdot \frac{TSA - LSA}{\sin(\angle \beta)} \cdot S_b \cdot \sqrt{1 + (2 \cdot \cos(\angle \alpha) \cdot \cos(\angle \beta) \cdot \cos(\angle \gamma)) - (\cos(\angle \alpha)^2 + \cos(\angle \beta)^2 + \cos(\angle \beta)^2 + \cos(\angle \beta)^2)}$ ex 3632.69m³ = $\frac{1}{2} \cdot \frac{1960m^2 - 1440m^2}{\sin(60^\circ)} \cdot 20m \cdot \sqrt{1 + (2 \cdot \cos(45^\circ) \cdot \cos(60^\circ) \cdot \cos(75^\circ)) - (\cos(45^\circ)^2 + \cos(60^\circ)^2)}$



Variables Used

- ∠α Angle Alpha of Parallelepiped (Degree)
- $\angle \beta$ Angle Beta of Parallelepiped (Degree)
- ∠γ Angle Gamma of Parallelepiped (Degree)
- LSA Lateral Surface Area of Parallelepiped (Square Meter)
- P Perimeter of Parallelepiped (Meter)
- Sa Side A of Parallelepiped (Meter)
- Sb Side B of Parallelepiped (Meter)
- Sc Side C of Parallelepiped (Meter)
- TSA Total Surface Area of Parallelepiped (Square Meter)
- V Volume of Parallelepiped (Cubic Meter)





Constants, Functions, Measurements used

- Function: asin, asin(Number) Inverse trigonometric sine function
- Function: cos, cos(Angle) Trigonometric cosine function
- Function: **sin**, sin(Angle) *Trigonometric sine function*
- Function: sqrt, sqrt(Number) Square root function
- Measurement: Length in Meter (m) Length Unit Conversion
- Measurement: Volume in Cubic Meter (m³) Volume Unit Conversion
- Measurement: Area in Square Meter (m²) Area Unit Conversion
- Measurement: Angle in Degree (°) Angle Unit Conversion





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- Hollow Pyramid Formulas
- Hollow Sphere Formulas

- Skewed Three Edged Prism Formulas
- Small Stellated Dodecahedron Formulas

- Trirectangular Tetrahedron Formulas
- Truncated Rhombohedron Formulas

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