



[calculatoratoz.com](http://calculatoratoz.com)



[unitsconverters.com](http://unitsconverters.com)

# Important Formulas of Cube

Calculators!

Examples!

Conversions!

Bookmark [calculatoratoz.com](http://calculatoratoz.com), [unitsconverters.com](http://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 35 Important Formulas of Cube

## Important Formulas of Cube

### Area of Cube

#### 1) Face Area of Cube

$$\text{fx } A_{\text{Face}} = l_e^2$$

[Open Calculator !\[\]\(de95854c7ee024cfadc48187bbb781b2\_img.jpg\)](#)

$$\text{ex } 100\text{m}^2 = (10\text{m})^2$$

#### 2) Face Area of Cube given Circumsphere Radius

$$\text{fx } A_{\text{Face}} = \frac{4}{3} \cdot r_c^2$$

[Open Calculator !\[\]\(6a9b39b98eb945faa14c645ec99e4eaa\_img.jpg\)](#)

$$\text{ex } 108\text{m}^2 = \frac{4}{3} \cdot (9\text{m})^2$$

#### 3) Face Area of Cube given Perimeter

$$\text{fx } A_{\text{Face}} = \left(\frac{P}{12}\right)^2$$

[Open Calculator !\[\]\(f1c5da15572e3e09d343161be98f508d\_img.jpg\)](#)

$$\text{ex } 100\text{m}^2 = \left(\frac{120\text{m}}{12}\right)^2$$



#### 4) Lateral Surface Area of Cube

$$fx \quad LSA = 4 \cdot l_e^2$$

[Open Calculator !\[\]\(cbe80b694ebd74fcfe136a095b608235\_img.jpg\)](#)

$$ex \quad 400m^2 = 4 \cdot (10m)^2$$

#### 5) Lateral Surface Area of Cube given Total Surface Area and Edge Length

$$fx \quad LSA = TSA - 2 \cdot l_e^2$$

[Open Calculator !\[\]\(3e2231b1ad3ca8da8658228c00dd08e0\_img.jpg\)](#)

$$ex \quad 400m^2 = 600m^2 - 2 \cdot (10m)^2$$

#### 6) Lateral Surface Area of Cube given Volume

$$fx \quad LSA = 4 \cdot V^{\frac{2}{3}}$$

[Open Calculator !\[\]\(0d5ec72f61334709c3fc9450209b754f\_img.jpg\)](#)

$$ex \quad 400m^2 = 4 \cdot (1000m^3)^{\frac{2}{3}}$$

#### 7) Total Surface Area of Cube

$$fx \quad TSA = 6 \cdot l_e^2$$

[Open Calculator !\[\]\(b64b40baaee5acddc1eab8538ba84754\_img.jpg\)](#)

$$ex \quad 600m^2 = 6 \cdot (10m)^2$$

#### 8) Total Surface Area of Cube given Lateral Surface Area

$$fx \quad TSA = \frac{3}{2} \cdot LSA$$

[Open Calculator !\[\]\(aff7c69c44a5e015f18c35867ef3f5c3\_img.jpg\)](#)

$$ex \quad 600m^2 = \frac{3}{2} \cdot 400m^2$$



## 9) Total Surface Area of Cube given Space Diagonal

$$\text{fx } \text{TSA} = 2 \cdot d_{\text{Space}}^2$$

[Open Calculator !\[\]\(e78f798d4ea5c530c9db49e7d26e6b95\_img.jpg\)](#)

$$\text{ex } 578\text{m}^2 = 2 \cdot (17\text{m})^2$$

## 10) Total Surface Area of Cube given Volume

$$\text{fx } \text{TSA} = 6 \cdot V^{\frac{2}{3}}$$

[Open Calculator !\[\]\(05be7c7a8995decd503647c99211f7c2\_img.jpg\)](#)

$$\text{ex } 600\text{m}^2 = 6 \cdot (1000\text{m}^3)^{\frac{2}{3}}$$

## Diagonal of Cube

### 11) Face Diagonal of Cube

$$\text{fx } d_{\text{Face}} = \sqrt{2} \cdot l_e$$

[Open Calculator !\[\]\(626ce8ac21792b9405bfddfea8e0c96a\_img.jpg\)](#)

$$\text{ex } 14.14214\text{m} = \sqrt{2} \cdot 10\text{m}$$


### 12) Face Diagonal of Cube given Lateral Surface Area

$$\text{fx } d_{\text{Face}} = \sqrt{\frac{\text{LSA}}{2}}$$

[Open Calculator !\[\]\(c1168d6a8b365d11e842ece304635fa7\_img.jpg\)](#)

$$\text{ex } 14.14214\text{m} = \sqrt{\frac{400\text{m}^2}{2}}$$



13) Face Diagonal of Cube given Total Surface Area 

$$fx \quad d_{\text{Face}} = \sqrt{\frac{\text{TSA}}{3}}$$

Open Calculator 


$$ex \quad 14.14214\text{m} = \sqrt{\frac{600\text{m}^2}{3}}$$

14) Space Diagonal of Cube 

$$fx \quad d_{\text{Space}} = \sqrt{3} \cdot l_e$$

Open Calculator 


$$ex \quad 17.32051\text{m} = \sqrt{3} \cdot 10\text{m}$$

15) Space Diagonal of Cube given Circumsphere Radius 

$$fx \quad d_{\text{Space}} = 2 \cdot r_c$$

Open Calculator 

$$ex \quad 18\text{m} = 2 \cdot 9\text{m}$$


16) Space Diagonal of Cube given Perimeter 

$$fx \quad d_{\text{Space}} = \frac{\sqrt{3} \cdot P}{12}$$

Open Calculator 

$$ex \quad 17.32051\text{m} = \frac{\sqrt{3} \cdot 120\text{m}}{12}$$




17) Space Diagonal of Cube given Total Surface Area 

$$fx \quad d_{\text{Space}} = \sqrt{\frac{\text{TSA}}{2}}$$

[Open Calculator !\[\]\(d3fb9f94af8b26d1c844efa9a98805b0\_img.jpg\)](#)


$$ex \quad 17.32051\text{m} = \sqrt{\frac{600\text{m}^2}{2}}$$

Edge Length of Cube 18) Edge Length of Cube given Circumsphere Radius 

$$fx \quad l_e = \frac{2}{\sqrt{3}} \cdot r_c$$

[Open Calculator !\[\]\(73002692dd5e7a64e60946be3158e719\_img.jpg\)](#)

$$ex \quad 10.3923\text{m} = \frac{2}{\sqrt{3}} \cdot 9\text{m}$$


19) Edge Length of Cube given Space Diagonal 

$$fx \quad l_e = \frac{d_{\text{Space}}}{\sqrt{3}}$$

[Open Calculator !\[\]\(104fbf564e2e5a8fbd84f31656d114c7\_img.jpg\)](#)

$$ex \quad 9.814955\text{m} = \frac{17\text{m}}{\sqrt{3}}$$




20) Edge Length of Cube given Total Surface Area 

$$\text{fx } l_e = \sqrt{\frac{\text{TSA}}{6}}$$

Open Calculator 

$$\text{ex } 10\text{m} = \sqrt{\frac{600\text{m}^2}{6}}$$

21) Edge Length of Cube given Volume 

$$\text{fx } l_e = V^{\frac{1}{3}}$$

Open Calculator 


$$\text{ex } 10\text{m} = (1000\text{m}^3)^{\frac{1}{3}}$$

Perimeter of Cube 22) Face Perimeter of Cube 

$$\text{fx } P_{\text{Face}} = 4 \cdot l_e$$

Open Calculator 

$$\text{ex } 40\text{m} = 4 \cdot 10\text{m}$$

23) Face Perimeter of Cube given Total Surface Area 

$$\text{fx } P_{\text{Face}} = 4 \cdot \sqrt{\frac{\text{TSA}}{6}}$$

Open Calculator 

$$\text{ex } 40\text{m} = 4 \cdot \sqrt{\frac{600\text{m}^2}{6}}$$




24) Perimeter of Cube 

$$fx \quad P = 12 \cdot l_e$$

[Open Calculator !\[\]\(6605b201d6f14d9b3bcb8ab5f274d107\_img.jpg\)](#)


$$ex \quad 120m = 12 \cdot 10m$$

25) Perimeter of Cube given Face Perimeter 

$$fx \quad P = 3 \cdot P_{\text{Face}}$$

[Open Calculator !\[\]\(e8fb589d58dad1692debababa5e928b6\_img.jpg\)](#)

$$ex \quad 120m = 3 \cdot 40m$$

26) Perimeter of Cube given Volume 

$$fx \quad P = 12 \cdot V^{\frac{1}{3}}$$

[Open Calculator !\[\]\(4688aadfd656ded00cd6bdfae55089a9\_img.jpg\)](#)

$$ex \quad 120m = 12 \cdot (1000m^3)^{\frac{1}{3}}$$

Radius of Cube 27) Circumscribed Cylinder Radius of Cube 

$$fx \quad r_{\text{c(Cylinder)}} = \frac{l_e}{\sqrt{2}}$$

[Open Calculator !\[\]\(9db214d549b9aeebe72aa11d3a5c4b1a\_img.jpg\)](#)

$$ex \quad 7.071068m = \frac{10m}{\sqrt{2}}$$





28) Circumsphere Radius of Cube 

$$\text{fx } r_c = \frac{\sqrt{3}}{2} \cdot l_e$$

[Open Calculator !\[\]\(c3d993ca47bfe2a953c700506ce31fa0\_img.jpg\)](#)

$$\text{ex } 8.660254\text{m} = \frac{\sqrt{3}}{2} \cdot 10\text{m}$$

29) Inscribed Cylinder Radius of Cube 

$$\text{fx } r_{i(\text{Cylinder})} = \frac{l_e}{2}$$

[Open Calculator !\[\]\(17413706fd4997a1a4bdf85c6864eee1\_img.jpg\)](#)

$$\text{ex } 5\text{m} = \frac{10\text{m}}{2}$$

30) Insphere Radius of Cube 

$$\text{fx } r_i = \frac{l_e}{2}$$

[Open Calculator !\[\]\(4b7a79268f6ba26c1471d4232fffa85a\_img.jpg\)](#)

$$\text{ex } 5\text{m} = \frac{10\text{m}}{2}$$

31) Midsphere Radius of Cube 

$$\text{fx } r_m = \frac{l_e}{\sqrt{2}}$$

[Open Calculator !\[\]\(3342c215b2a8b663596a81468d5dc314\_img.jpg\)](#)

$$\text{ex } 7.071068\text{m} = \frac{10\text{m}}{\sqrt{2}}$$



## Volume of Cube

### 32) Volume of Cube

$$fx \quad V = l_e^3$$

[Open Calculator !\[\]\(339a16584d5da0f0a3ca4e9ec17bf6a1\_img.jpg\)](#)

$$ex \quad 1000m^3 = (10m)^3$$

### 33) Volume of Cube given Circumsphere Radius

$$fx \quad V = \left( \frac{2}{\sqrt{3}} \cdot r_c \right)^3$$

[Open Calculator !\[\]\(6059a5aa8b4ca7bb793408023d6c6e42\_img.jpg\)](#)

$$ex \quad 1122.369m^3 = \left( \frac{2}{\sqrt{3}} \cdot 9m \right)^3$$

### 34) Volume of Cube given Space Diagonal

$$fx \quad V = \left( \frac{d_{Space}}{\sqrt{3}} \right)^3$$

[Open Calculator !\[\]\(e3275251d0893157c3584e20c81dc3ba\_img.jpg\)](#)

$$ex \quad 945.5073m^3 = \left( \frac{17m}{\sqrt{3}} \right)^3$$



**35) Volume of Cube given Total Surface Area** [Open Calculator](#) 

$$\text{fx } V = \left( \frac{\text{TSA}}{6} \right)^{\frac{3}{2}}$$

$$\text{ex } 1000\text{m}^3 = \left( \frac{600\text{m}^2}{6} \right)^{\frac{3}{2}}$$






## Variables Used

- **$A_{\text{Face}}$**  Face Area of Cube (Square Meter)
- **$d_{\text{Face}}$**  Face Diagonal of Cube (Meter)
- **$d_{\text{Space}}$**  Space Diagonal of Cube (Meter)
- **$l_e$**  Edge Length of Cube (Meter)
- **$LSA$**  Lateral Surface Area of Cube (Square Meter)
- **$P$**  Perimeter of Cube (Meter)
- **$P_{\text{Face}}$**  Face Perimeter of Cube (Meter)
- **$r_c$**  Circumsphere Radius of Cube (Meter)
- **$r_{c(\text{Cylinder})}$**  Circumscribed Cylinder Radius of Cube (Meter)
- **$r_i$**  Insphere Radius of Cube (Meter)
- **$r_{i(\text{Cylinder})}$**  Inscribed Cylinder Radius of Cube (Meter)
- **$r_m$**  Midsphere Radius of Cube (Meter)
- **$TSA$**  Total Surface Area of Cube (Square Meter)
- **$V$**  Volume of Cube (Cubic Meter)



## Constants, Functions, Measurements used

- **Function:** **sqrt**,  $\text{sqrt}(\text{Number})$   
*Square root function*
- **Measurement:** **Length** in Meter (m)  
*Length Unit Conversion* 
- **Measurement:** **Volume** in Cubic Meter ( $\text{m}^3$ )  
*Volume Unit Conversion* 
- **Measurement:** **Area** in Square Meter ( $\text{m}^2$ )  
*Area Unit Conversion* 



## Check other formula lists

- [Cube Formulas](#) 
- [Dodecahedron Formulas](#) 
- [Icosahedron Formulas](#) 
- [Octahedron Formulas](#) 
- [Tetrahedron Formulas](#) 

Feel free to SHARE this document with your friends!

## PDF Available in

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

5/17/2023 | 7:10:56 AM UTC

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

