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# Tangential Quadrilateral Formulas

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# List of 9 Tangential Quadrilateral Formulas

## Tangential Quadrilateral

### Area, Perimeter and Radius of Tangential Quadrilateral

#### 1) Area of Tangential Quadrilateral

$$fx \quad A = (S_a + S_c) \cdot r_i$$

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

$$ex \quad 120m^2 = (8m + 4m) \cdot 10m$$

#### 2) Inradius of Tangential Quadrilateral given Area

$$fx \quad r_i = \frac{A}{S_a + S_c}$$

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

$$ex \quad 10m = \frac{120m^2}{8m + 4m}$$

#### 3) Perimeter of Tangential Quadrilateral

$$fx \quad P = S_a + S_b + S_c + S_d$$

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

$$ex \quad 24m = 8m + 7m + 4m + 5m$$



## Side of Tangential Quadrilateral

### 4) Side A of Tangential Quadrilateral given Area

$$fx \quad S_a = \frac{A}{r_i} - S_c$$

[Open Calculator !\[\]\(a03a7eb2f4046e1d3c76772003e549ea\_img.jpg\)](#)

$$ex \quad 8m = \frac{120m^2}{10m} - 4m$$

### 5) Side A of Tangential Quadrilateral given other Sides

$$fx \quad S_a = S_b + S_d - S_c$$

[Open Calculator !\[\]\(5361750c22c4e047a52f4eac1ec2d4cc\_img.jpg\)](#)

$$ex \quad 8m = 7m + 5m - 4m$$

### 6) Side B of Tangential Quadrilateral given other Sides

$$fx \quad S_b = S_a + S_c - S_d$$

[Open Calculator !\[\]\(b792654f2cef9719eabeb6c5be00811e\_img.jpg\)](#)

$$ex \quad 7m = 8m + 4m - 5m$$


### 7) Side C of Tangential Quadrilateral given Area

$$fx \quad S_c = \frac{A}{r_i} - S_a$$

[Open Calculator !\[\]\(84f47badaad7772cd95667a7c387a639\_img.jpg\)](#)

$$ex \quad 4m = \frac{120m^2}{10m} - 8m$$



**8) Side C of Tangential Quadrilateral given other Sides** 

**fx**  $S_c = S_b + S_d - S_a$

**Open Calculator** 

**ex**  $4m = 7m + 5m - 8m$

**9) Side D of Tangential Quadrilateral given other Sides** 

**fx**  $S_d = S_a + S_c - S_b$

**Open Calculator** 

**ex**  $5m = 8m + 4m - 7m$





## Variables Used

- **A** Area of Tangential Quadrilateral (*Square Meter*)
- **P** Perimeter of Tangential Quadrilateral (*Meter*)
- **$r_i$**  Inradius of Tangential Quadrilateral (*Meter*)
- **$S_a$**  Side A of Tangential Quadrilateral (*Meter*)
- **$S_b$**  Side B of Tangential Quadrilateral (*Meter*)
- **$S_c$**  Side C of Tangential Quadrilateral (*Meter*)
- **$S_d$**  Side D of Tangential Quadrilateral (*Meter*)



## Constants, Functions, Measurements used
















- **Measurement: Length** in Meter (m)  
*Length Unit Conversion* 
- **Measurement: Area** in Square Meter (m<sup>2</sup>)  
*Area Unit Conversion* 



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