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Golden Rectangle Formulas

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List of 20 Golden Rectangle Formulas

Golden Rectangle

Area of Golden Rectangle

1) Area of Golden Rectangle

$$\text{fx } A = \frac{l^2}{[\text{phi}]}$$

[Open Calculator !\[\]\(de95854c7ee024cfadc48187bbb781b2_img.jpg\)](#)

$$\text{ex } 61.8034\text{m}^2 = \frac{(10\text{m})^2}{[\text{phi}]}$$

2) Area of Golden Rectangle given Breadth

$$\text{fx } A = [\text{phi}] \cdot b^2$$

[Open Calculator !\[\]\(6a9b39b98eb945faa14c645ec99e4eaa_img.jpg\)](#)

$$\text{ex } 58.24922\text{m}^2 = [\text{phi}] \cdot (6\text{m})^2$$

3) Area of Golden Rectangle given Diagonal

$$\text{fx } A = \frac{[\text{phi}]}{1 + [\text{phi}]^2} \cdot d^2$$

[Open Calculator !\[\]\(f1c5da15572e3e09d343161be98f508d_img.jpg\)](#)

$$\text{ex } 64.39876\text{m}^2 = \frac{[\text{phi}]}{1 + [\text{phi}]^2} \cdot (12\text{m})^2$$



4) Area of Golden Rectangle given Perimeter

[Open Calculator !\[\]\(4729e517bc6a7cd81c8025b9646574fb_img.jpg\)](#)

$$\text{fx } A = [\text{phi}] \cdot \left(\frac{P}{2 \cdot (1 + [\text{phi}])} \right)^2$$

$$\text{ex } 53.11529\text{m}^2 = [\text{phi}] \cdot \left(\frac{30\text{m}}{2 \cdot (1 + [\text{phi}])} \right)^2$$

Diagonal of Golden Rectangle

5) Diagonal of Golden Rectangle

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

$$\text{fx } d = \sqrt{1 + \frac{1}{[\text{phi}]^2}} \cdot l$$

$$\text{ex } 11.75571\text{m} = \sqrt{1 + \frac{1}{[\text{phi}]^2}} \cdot 10\text{m}$$

6) Diagonal of Golden Rectangle given Area

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

$$\text{fx } d = \sqrt{\left([\text{phi}] + \frac{1}{[\text{phi}]} \right) \cdot A}$$

$$\text{ex } 11.58292\text{m} = \sqrt{\left([\text{phi}] + \frac{1}{[\text{phi}]} \right) \cdot 60\text{m}^2}$$



7) Diagonal of Golden Rectangle given Breadth

[Open Calculator !\[\]\(dfbd6b3763a6d1d9afaa974f64e2e4b5_img.jpg\)](#)

$$\text{fx } d = \sqrt{[\text{phi}]^2 + 1} \cdot b$$

$$\text{ex } 11.41268\text{m} = \sqrt{[\text{phi}]^2 + 1} \cdot 6\text{m}$$

8) Diagonal of Golden Rectangle given Perimeter

[Open Calculator !\[\]\(ec9132f1d27c8919987d92907322654d_img.jpg\)](#)

$$\text{fx } d = \frac{\sqrt{[\text{phi}]^2 + 1}}{2 \cdot ([\text{phi}] + 1)} \cdot P$$

$$\text{ex } 10.89814\text{m} = \frac{\sqrt{[\text{phi}]^2 + 1}}{2 \cdot ([\text{phi}] + 1)} \cdot 30\text{m}$$

Perimeter of Golden Rectangle

9) Perimeter of Golden Rectangle

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

$$\text{fx } P = 2 \cdot \left(1 + \frac{1}{[\text{phi}]} \right) \cdot l$$

$$\text{ex } 32.36068\text{m} = 2 \cdot \left(1 + \frac{1}{[\text{phi}]} \right) \cdot 10\text{m}$$



10) Perimeter of Golden Rectangle given Area

[Open Calculator !\[\]\(bd1a142de767a21e5362c595f844a4ff_img.jpg\)](#)

$$\text{fx } P = 2 \cdot \left(1 + \frac{1}{[\text{phi}]} \right) \cdot \sqrt{[\text{phi}] \cdot A}$$

$$\text{ex } 31.88505\text{m} = 2 \cdot \left(1 + \frac{1}{[\text{phi}]} \right) \cdot \sqrt{[\text{phi}] \cdot 60\text{m}^2}$$

11) Perimeter of Golden Rectangle given Breadth

[Open Calculator !\[\]\(830769b31eeeaca920791081939ff8ba_img.jpg\)](#)

$$\text{fx } P = 2 \cdot (1 + [\text{phi}]) \cdot b$$

$$\text{ex } 31.41641\text{m} = 2 \cdot (1 + [\text{phi}]) \cdot 6\text{m}$$

12) Perimeter of Golden Rectangle given Diagonal

[Open Calculator !\[\]\(47734e4656765d20df4fdbd5b7aff048_img.jpg\)](#)

$$\text{fx } P = \frac{2 \cdot ([\text{phi}] + 1)}{\sqrt{[\text{phi}]^2 + 1}} \cdot d$$

$$\text{ex } 33.03317\text{m} = \frac{2 \cdot ([\text{phi}] + 1)}{\sqrt{[\text{phi}]^2 + 1}} \cdot 12\text{m}$$

Side of Golden Rectangle



Breadth of Golden Rectangle

13) Breadth of Golden Rectangle

$$\text{fx } b = \frac{l}{[\text{phi}]}$$

[Open Calculator !\[\]\(950a62bbddad88d64435fd35607dfc42_img.jpg\)](#)

$$\text{ex } 6.18034\text{m} = \frac{10\text{m}}{[\text{phi}]}$$

14) Breadth of Golden Rectangle given Area

$$\text{fx } b = \sqrt{\frac{A}{[\text{phi}]}}$$

[Open Calculator !\[\]\(73002692dd5e7a64e60946be3158e719_img.jpg\)](#)

$$\text{ex } 6.089502\text{m} = \sqrt{\frac{60\text{m}^2}{[\text{phi}]}}$$

15) Breadth of Golden Rectangle given Diagonal

$$\text{fx } b = \frac{d}{\sqrt{1 + [\text{phi}]^2}}$$

[Open Calculator !\[\]\(104fbf564e2e5a8fbd84f31656d114c7_img.jpg\)](#)

$$\text{ex } 6.308773\text{m} = \frac{12\text{m}}{\sqrt{1 + [\text{phi}]^2}}$$



16) Breadth of Golden Rectangle given Perimeter [Open Calculator !\[\]\(feabb98897b440bc8695a03336a6e2df_img.jpg\)](#)

$$\text{fx } b = \frac{P}{2 \cdot (1 + [\text{phi}])}$$

$$\text{ex } 5.72949\text{m} = \frac{30\text{m}}{2 \cdot (1 + [\text{phi}])}$$

Length of Golden Rectangle 17) Length of Golden Rectangle [Open Calculator !\[\]\(2b376d1a92330ab09dad2665d2f89bf5_img.jpg\)](#)

$$\text{fx } l = [\text{phi}] \cdot b$$

$$\text{ex } 9.708204\text{m} = [\text{phi}] \cdot 6\text{m}$$

18) Length of Golden Rectangle given Area [Open Calculator !\[\]\(c444627dab9fee9a1550c053ffaaaae2_img.jpg\)](#)

$$\text{fx } l = \sqrt{[\text{phi}] \cdot A}$$

$$\text{ex } 9.853022\text{m} = \sqrt{[\text{phi}] \cdot 60\text{m}^2}$$



19) Length of Golden Rectangle given Diagonal

[Open Calculator !\[\]\(3d8c13c92b853674f749aac6fa869926_img.jpg\)](#)

$$\text{fx } l = \frac{[\text{phi}]}{\sqrt{1 + [\text{phi}]^2}} \cdot d$$

$$\text{ex } 10.20781\text{m} = \frac{[\text{phi}]}{\sqrt{1 + [\text{phi}]^2}} \cdot 12\text{m}$$

20) Length of Golden Rectangle given Perimeter

[Open Calculator !\[\]\(17acf1afa8cdf0b67c53d4865a5ed469_img.jpg\)](#)

$$\text{fx } l = \frac{[\text{phi}]}{2 \cdot (1 + [\text{phi}])} \cdot P$$

$$\text{ex } 9.27051\text{m} = \frac{[\text{phi}]}{2 \cdot (1 + [\text{phi}])} \cdot 30\text{m}$$



Variables Used

- **A** Area of Golden Rectangle (*Square Meter*)
- **b** Breadth of Golden Rectangle (*Meter*)
- **d** Diagonal of Golden Rectangle (*Meter*)
- **l** Length of Golden Rectangle (*Meter*)
- **P** Perimeter of Golden Rectangle (*Meter*)



Constants, Functions, Measurements used

- **Constant:** **[phi]**, 1.61803398874989484820458683436563811
Golden ratio
- **Function:** **sqrt**, sqrt(Number)
Square root function
- **Measurement:** **Length** in Meter (m)
Length Unit Conversion 
- **Measurement:** **Area** in Square Meter (m²)
Area Unit Conversion 



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