Important Golden Rectangle Formulas PDF

Formulas
Examples
with Units

List of 20
Important Golden Rectangle Formulas

1) Area of Golden Rectangle Formulas

1.1) Area of Golden Rectangle Formula

Evaluate Formula

Formula

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

Example with Units

$$61.8034\,\text{m}^2 = \frac{10\,\text{m}^2}{1.618}$$

1.2) Area of Golden Rectangle given Breadth Formula

Evaluate Formula

Formula

$$A = [phi] \cdot b^2$$

Example with Units

$$58.2492\,\text{m}^2 = 1.618 \cdot 6\,\text{m}^2$$

1.3) Area of Golden Rectangle given Diagonal Formula

Evaluate Formula

Formula

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

Example with Units

$$64.3988\,\text{m}^2 = \frac{1.618}{1 + 1.618^2} \cdot 12\,\text{m}^2$$

1.4) Area of Golden Rectangle given Perimeter Formula

Evaluate Formula

Formula

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

Example with Units

$$53.1153\,\text{m}^2 = 1.618 \cdot \left(\frac{30\,\text{m}}{2 \cdot (1 + 1.618)}\right)^2$$

2) Diagonal of Golden Rectangle Formulas

2.1) Diagonal of Golden Rectangle Formula

Evaluate Formula

Formula

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

Example with Units

$$11.7557\,\text{m} = \sqrt{1 + \frac{1}{1.618^2}} \cdot 10\,\text{m}$$

2.2) Diagonal of Golden Rectangle given Area Formula

Evaluate Formula

Formula

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

Example with Units

$$11.5829\,\text{m} = \sqrt{\left(1.618 + \frac{1}{1.618}\right) \cdot 60\,\text{m}^2}$$

2.3) Diagonal of Golden Rectangle given Breadth Formula

Evaluate Formula

Formula

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

Example with Units

$$11.4127\,\text{m} = \sqrt{1.618^2 + 1} \cdot 6\,\text{m}$$

2.4) Diagonal of Golden Rectangle given Perimeter Formula

Evaluate Formula

Formula

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

Example with Units

$$10.8981\,\text{m} = \frac{\sqrt{1.618^2 + 1}}{2 \cdot (1.618 + 1)} \cdot 30\,\text{m}$$

3) Perimeter of Golden Rectangle Formulas

3.1) Perimeter of Golden Rectangle Formula

Evaluate Formula

Formula

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

Example with Units

$$32.3607\,\text{m} = 2 \cdot \left(1 + \frac{1}{1.618}\right) \cdot 10\,\text{m}$$

3.2) Perimeter of Golden Rectangle given Area Formula

Evaluate Formula

Formula

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

Example with Units

$$31.885\,\text{m} = 2 \cdot \left(1 + \frac{1}{1.618}\right) \cdot \sqrt{1.618 \cdot 60\,\text{m}^2}$$

3.3) Perimeter of Golden Rectangle given Breadth Formula

Evaluate Formula

Formula

$$P = 2 \cdot (1 + [phi]) \cdot b$$

Example with Units

$$31.4164\,\text{m} = 2 \cdot (1 + 1.618) \cdot 6\,\text{m}$$

3.4) Perimeter of Golden Rectangle given Diagonal Formula

Evaluate Formula

Formula

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

Example with Units

$$33.0332\,\text{m} = \frac{2 \cdot (1.618 + 1)}{\sqrt{1.618^2 + 1}} \cdot 12\,\text{m}$$

4) Side of Golden Rectangle Formulas

4.1) Breadth of Golden Rectangle Formulas

4.1.1) Breadth of Golden Rectangle Formula

Evaluate Formula

Formula

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

Example with Units

$$6.1803\,\text{m} = \frac{10\,\text{m}}{1.618}$$

4.1.2) Breadth of Golden Rectangle given Area Formula

Evaluate Formula

Formula

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

Example with Units

$$6.0895\,\text{m} = \sqrt{\frac{60\,\text{m}^2}{1.618}}$$

4.1.3) Breadth of Golden Rectangle given Diagonal Formula

Evaluate Formula

Formula

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

Example with Units

$$6.3088\,\text{m} = \frac{12\,\text{m}}{\sqrt{1 + 1.618^2}}$$

4.1.4) Breadth of Golden Rectangle given Perimeter Formula

Evaluate Formula

Formula

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

Example with Units

$$5.7295\,\text{m} = \frac{30\,\text{m}}{2 \cdot (1 + 1.618)}$$

4.2) Length of Golden Rectangle Formulas

4.2.1) Length of Golden Rectangle Formula

Evaluate Formula

Formula

$$l = [phi] \cdot b$$

Example with Units

$$9.7082\,\text{m} = 1.618 \cdot 6\,\text{m}$$

4.2.2) Length of Golden Rectangle given Area Formula

Evaluate Formula

Formula

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

Example with Units

$$9.853\,\text{m} = \sqrt{1.618 \cdot 60\,\text{m}^2}$$

4.2.3) Length of Golden Rectangle given Diagonal Formula

Evaluate Formula

Formula

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

Example with Units

$$10.2078\,\text{m} = \frac{1.618}{\sqrt{1 + 1.618^2}} \cdot 12\,\text{m}$$

4.2.4) Length of Golden Rectangle given Perimeter Formula

Evaluate Formula

Formula

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

Example with Units

$$9.2705\,\text{m} = \frac{1.618}{2 \cdot (1 + 1.618)} \cdot 30\,\text{m}$$

Variables used in list of Golden Rectangle Formulas above

- **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 in list of Golden Rectangle Formulas above

- constant(s): **[phi]**, 1.61803398874989484820458683436563811 *Golden ratio*
- Functions: **sqrt**, sqrt(Number) *A square root function is a function that takes a non-negative number as an input and returns the square root of the given input number.*
- Measurement: **Length** in Meter (m) *Length Unit Conversion*
- Measurement: **Area** in Square Meter (m²) *Area Unit Conversion*

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