

## Half Square Kite Formulas

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## List of 12 Half Square Kite Formulas

## Half Square Kite

## Angle, Area and Perimeter of Half Square Kite $\sqrt{\top}$

1) Area of Half Square Kite
$f x \mathrm{~A}=\frac{\mathrm{S}_{\text {Square }}^{2}+\left(\mathrm{d}_{\mathrm{s}(\text { Non Square })} \cdot \mathrm{d}_{\text {Square }}\right)}{2}$
ex $44 \mathrm{~m}^{2}=\frac{(5 \mathrm{~m})^{2}+(9 \mathrm{~m} \cdot 7 \mathrm{~m})}{2}$
2) Perimeter of Half Square Kite $\longleftarrow$
$f \mathrm{fx}=2 \cdot\left(\mathrm{~S}_{\text {Square }}+\mathrm{S}_{\text {Non Square }}\right)$
ex $30 \mathrm{~m}=2 \cdot(5 \mathrm{~m}+10 \mathrm{~m})$
3) Stretched Corner Angle of Right Angle in Half Square Kite
$\mathrm{fx} \angle_{\text {Stretched Corner }}=\arccos \left(\frac{\left(2 \cdot \mathrm{~S}_{\text {Non Square }}^{2}\right)-\mathrm{d}_{\text {Square }}^{2}}{2 \cdot \mathrm{~S}_{\text {Non Square }}^{2}}\right)$
$\operatorname{ex} 40.97463^{\circ}=\arccos \left(\frac{\left(2 \cdot(10 \mathrm{~m})^{2}\right)-(7 \mathrm{~m})^{2}}{2 \cdot(10 \mathrm{~m})^{2}}\right)$
4) Symmetry Angle of Half Square Kite
$f \times \angle_{\text {Symmetry }}=\frac{\frac{3 \cdot \pi}{2}-\angle_{\text {Stretched Corner }}}{2}$
$\operatorname{ex} 115^{\circ}=\frac{\frac{3 \cdot \pi}{2}-40^{\circ}}{2}$

## Radius and Diagonal of Half Square Kite ©

5) Inradius of Half Square Kite $\preceq$
$f \mathrm{x} \mathrm{r}_{\mathrm{i}}=\frac{2 \cdot \mathrm{~A}}{\mathrm{P}}$
ex $3 \mathrm{~m}=\frac{2 \cdot 45 \mathrm{~m}^{2}}{30 \mathrm{~m}}$
6) Square Diagonal of Half Square Kite
$f \times \mathrm{d}_{\text {Square }}=\mathrm{S}_{\text {Square }} \cdot \sqrt{2}$
ex $7.071068 \mathrm{~m}=5 \mathrm{~m} \cdot \sqrt{2}$
7) Symmetry Diagonal of Half Square Kite
$\mathrm{d}_{\text {Symmetry }}=\sqrt{\mathrm{S}_{\text {Square }}^{2}+\mathrm{S}_{\text {Non Square }}^{2}-\left(2 \cdot \mathrm{~S}_{\text {Square }} \cdot \mathrm{S}_{\text {Non Square }} \cdot \cos \left(\angle_{\text {Symmetry }}\right)\right)}$
ex $12.93297 \mathrm{~m}=\sqrt{(5 \mathrm{~m})^{2}+(10 \mathrm{~m})^{2}-\left(2 \cdot 5 \mathrm{~m} \cdot 10 \mathrm{~m} \cdot \cos \left(115^{\circ}\right)\right)}$

## Side and Section of Half Square Kite ©

8) Non Square Side of Half Square Kite given Perimeter
$f x S_{\text {Non Square }}=\frac{P}{2}-S_{\text {Square }}$
ex $10 m=\frac{30 m}{2}-5 m$
9) Non Square Sided Symmetry Diagonal Section of Half Square Kite $\longleftarrow$
$f \mathrm{fx} \mathrm{d}_{\mathrm{s}(\text { Non Square })}=\mathrm{d}_{\text {Symmetry }}-\mathrm{d}_{\mathrm{s}(\text { Square })}$
ex $9 \mathrm{~m}=13 \mathrm{~m}-4 \mathrm{~m}$
10) Square Side of Half Square Kite given Perimeter $\longleftarrow$
$f \mathrm{fx} \mathrm{S}_{\text {Square }}=\frac{\mathrm{P}}{2}-\mathrm{S}_{\text {Non Square }}$
ex $5 \mathrm{~m}=\frac{30 \mathrm{~m}}{2}-10 \mathrm{~m}$
11) Square Side of Half Square Kite given Square Diagonal
$f \times \mathrm{S}_{\text {Square }}=\frac{\mathrm{d}_{\text {Square }}}{\sqrt{2}}$
ex $4.949747 \mathrm{~m}=\frac{7 \mathrm{~m}}{\sqrt{2}}$
12) Square Sided Symmetry Diagonal Section of Half Square Kite
$f \mathrm{x} \mathrm{d}_{\mathrm{s} \text { (Square) }}=\frac{\mathrm{S}_{\text {Square }}}{\sqrt{2}}$
ex $3.535534 \mathrm{~m}=\frac{5 \mathrm{~m}}{\sqrt{2}}$

## Variables Used

- $\angle$ Stretched Corner Stretched Corner Angle of Half Square Kite (Degree)
- $\angle$ Symmetry Symmetry Angle of Half Square Kite (Degree)
- A Area of Half Square Kite (Square Meter)
- $\mathbf{d}_{\mathbf{s}(\text { Non Square) }}$ Non Square Sided Symmetry Diagonal Section of HSK (Meter)
- $\mathbf{d}_{\mathbf{s}(\text { Square) }}$ Square Sided Symmetry Diagonal Section of HSK (Meter)
- $\mathbf{d}_{\text {Square }}$ Square Diagonal of Half Square Kite (Meter)
- $\mathbf{d}_{\text {Symmetry }}$ Symmetry Diagonal of Half Square Kite (Meter)
- P Perimeter of Half Square Kite (Meter)
- $\mathbf{r}_{\mathbf{i}}$ Inradius of Half Square Kite (Meter)
- $\mathbf{S}_{\text {Non }}$ Square Non Square Side of Half Square Kite (Meter)
- S $_{\text {Square }}$ Square Side of Half Square Kite (Meter)


## Constants, Functions, Measurements used

- Constant: pi, 3.14159265358979323846264338327950288 Archimedes' constant
- Function: arccos, arccos(Number) Inverse trigonometric cosine function
- Function: cos, $\cos ($ Angle)

Trigonometric cosine function

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

Area Unit Conversion

- Measurement: Angle in Degree ( ${ }^{\circ}$ ) Angle Unit Conversion


## Check other formula lists

- Kite Formulas
- Right Kite Formulas
- Half Square Kite Formulas


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