

# Ligebenet Trekant

1

$a$ - $b$  = Sidelængder

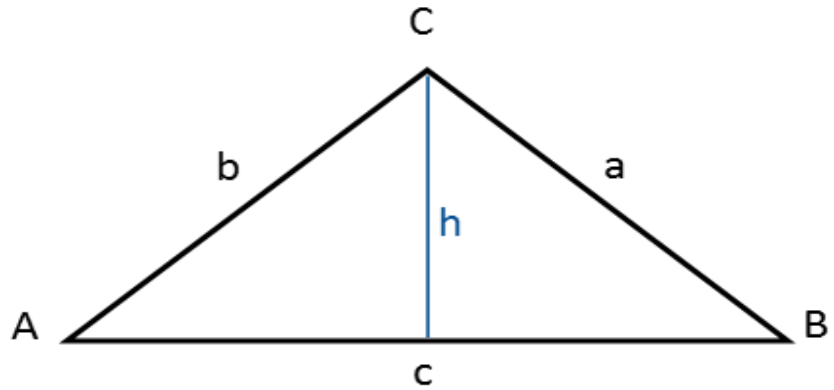
$c$  = Grundlinie

$h$  = Højde

$A$ - $B$ - $C$  = Vinkler

$T$  = Areal

$O$  = Omkreds



## Vinkel A

$$A = \sin^{-1}\left(\frac{h}{b}\right)$$

$$A = \cos^{-1}\left(\frac{c}{2 \cdot b}\right)$$

$$A = \tan^{-1}\left(\frac{2 \cdot h}{c}\right)$$

## Vinkel B

$$B = \sin^{-1}\left(\frac{h}{a}\right)$$

$$B = \cos^{-1}\left(\frac{c}{2 \cdot a}\right)$$

$$B = \tan^{-1}\left(\frac{2 \cdot h}{c}\right)$$

## Vinkel C

$$C = 2 \cdot \cos^{-1}\left(\frac{h}{a}\right)$$

$$C = 2 \cdot \cos^{-1}\left(\frac{h}{b}\right)$$

$$C = 2 \cdot \tan^{-1}\left(\frac{c}{2 \cdot h}\right)$$

$$C = 2 \cdot \sin^{-1}\left(\frac{c}{2 \cdot a}\right)$$

$$C = 2 \cdot \sin^{-1}\left(\frac{c}{2 \cdot b}\right)$$

$$C = 180 - (A + B)$$

Vinkler skrives altid med store bogstaver og sider med små bogstaver.

## Ligebenet Trekant

# 2

### Side a

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$$a = \sqrt{h^2 + \left(\frac{c}{2}\right)^2}$$

$$a = \frac{c}{2 \cdot \cos(B)}$$

$$a = \frac{h}{\cos\left(\frac{C}{2}\right)}$$

$$a = \frac{h}{\sin(B)}$$

$$a = \frac{c}{2 \cdot \sin\left(\frac{C}{2}\right)}$$

### Side b

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$$b = \sqrt{h^2 + \left(\frac{c}{2}\right)^2}$$

$$b = \frac{c}{2 \cdot \cos(A)}$$

$$b = \frac{h}{\cos\left(\frac{C}{2}\right)}$$

$$b = \frac{h}{\sin(A)}$$

$$b = \frac{c}{2 \cdot \sin\left(\frac{C}{2}\right)}$$

### Side c

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$$c = 2 \cdot \sqrt{a^2 - h^2}$$

$$c = 2 \cdot b \cdot \cos(A)$$

$$c = 2 \cdot b \cdot \sin\left(\frac{C}{2}\right)$$

$$c = 2 \cdot \frac{h}{\tan(A)}$$

$$c = 2 \cdot h \cdot \tan\left(\frac{C}{2}\right)$$

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# 3

## Højde

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$$h = \sqrt{b^2 - \left(\frac{c}{2}\right)^2}$$

$$h = b \cdot \sin(A)$$

$$h = b \cdot \cos\left(\frac{C}{2}\right)$$

$$h = \frac{c}{\tan(C)}$$

$$h = \frac{c}{2} \cdot \tan(A)$$

## Areal

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$$T = \frac{h \cdot c}{2}$$

$$T = \sqrt{a^2 \cdot c^2 - \left(\frac{a^2 + c^2 - b^2}{2}\right)^2}$$

$$T = \frac{a \cdot b \cdot \sin(C)}{2}$$

$$T = \frac{b \cdot c \cdot \sin(A)}{2}$$

$$T = \frac{a \cdot c \cdot \sin(B)}{2}$$

Beregning af Areal med variabelen "s" (Halve omkreds)

$$s = \frac{a + b + c}{2}$$

$$T = \sqrt{s \cdot (s - a) \cdot (s - b) \cdot (s - c)}$$

## Omkreds

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$$O = a + b + c$$

$$O = \frac{h}{\sin(A)} + \frac{h}{\sin(B)} + \frac{h}{\tan(A)} + \frac{h}{\tan(B)}$$

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