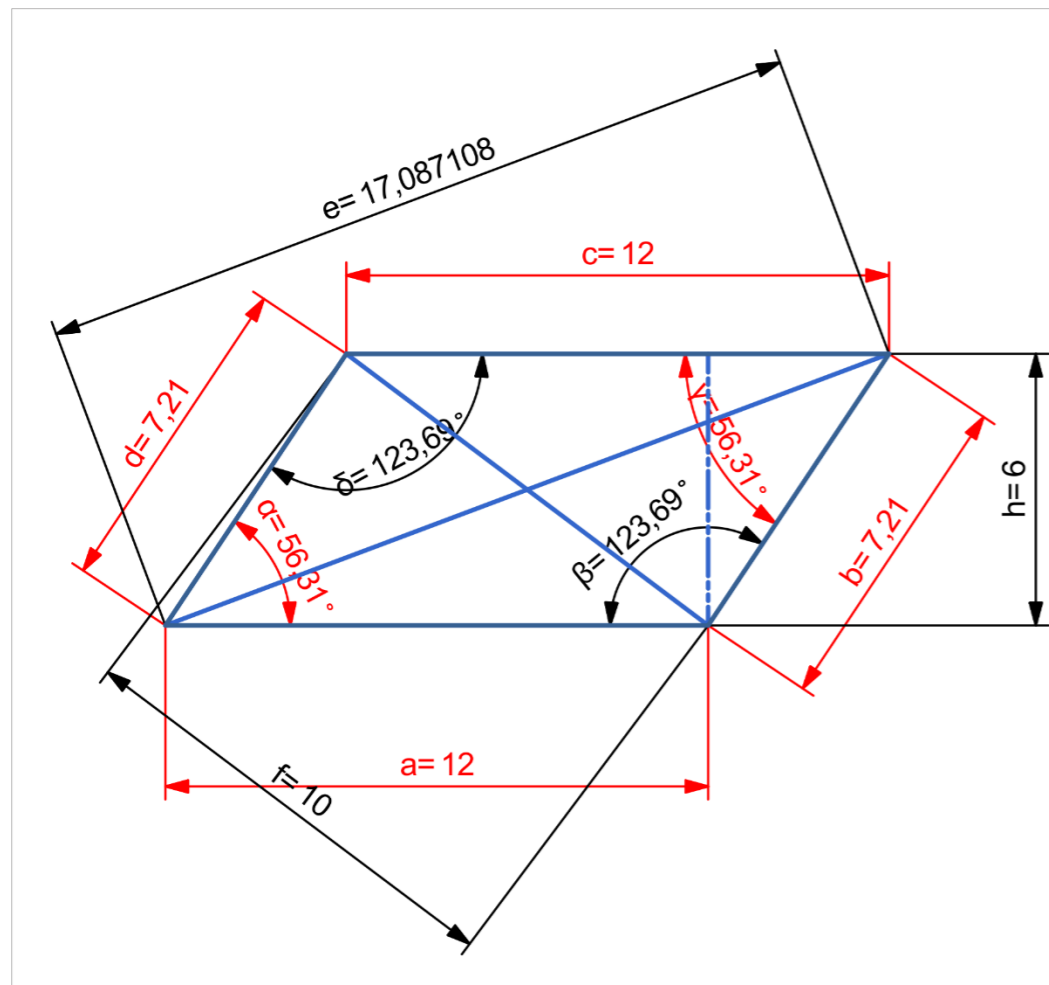


<https://www.gutefrage.net/frage/mathe-frage-trigonometrie-2>



#### Aufgabe 2a

f berechnen

Geg.:  $d = 7,21$  ;  $a = 12$  ;  $\alpha = 56,31^\circ$

---

$$f = \text{WURZEL}(b^2 + c^2 - 2 * (b * c * \text{COS}(\alpha)))$$

$$f = \text{WURZEL}(7,21^2 + 12^2 - 2 * (7,21 * 12 * \text{COS}(56,31)))$$

$$f = 10$$

---

$\beta$  berechnen

$$\beta = (360 - \alpha - c) / 2$$

$$\beta = (360 - 56,31 - 56,31) / 2$$

$$\beta = 123,69^\circ$$

---

e berechnen

Geg.:  $a = 12$  ;  $b = 7,21$  ;  $\beta = 123,69^\circ$

--

$$e = \text{WURZEL}(b^2 + a^2 - 2 * b * a * \text{COS}(\beta))$$

$$e = \text{WURZEL}(7,21^2 + 12^2 - 2 * 7,21 * 12 * \text{COS}(123,69))$$

$$e = 17,087108$$

---

$$h = a * \text{SIN}(\beta)$$

$$h = 7,21 * \text{SIN}(123,69)$$

$$h = 6$$

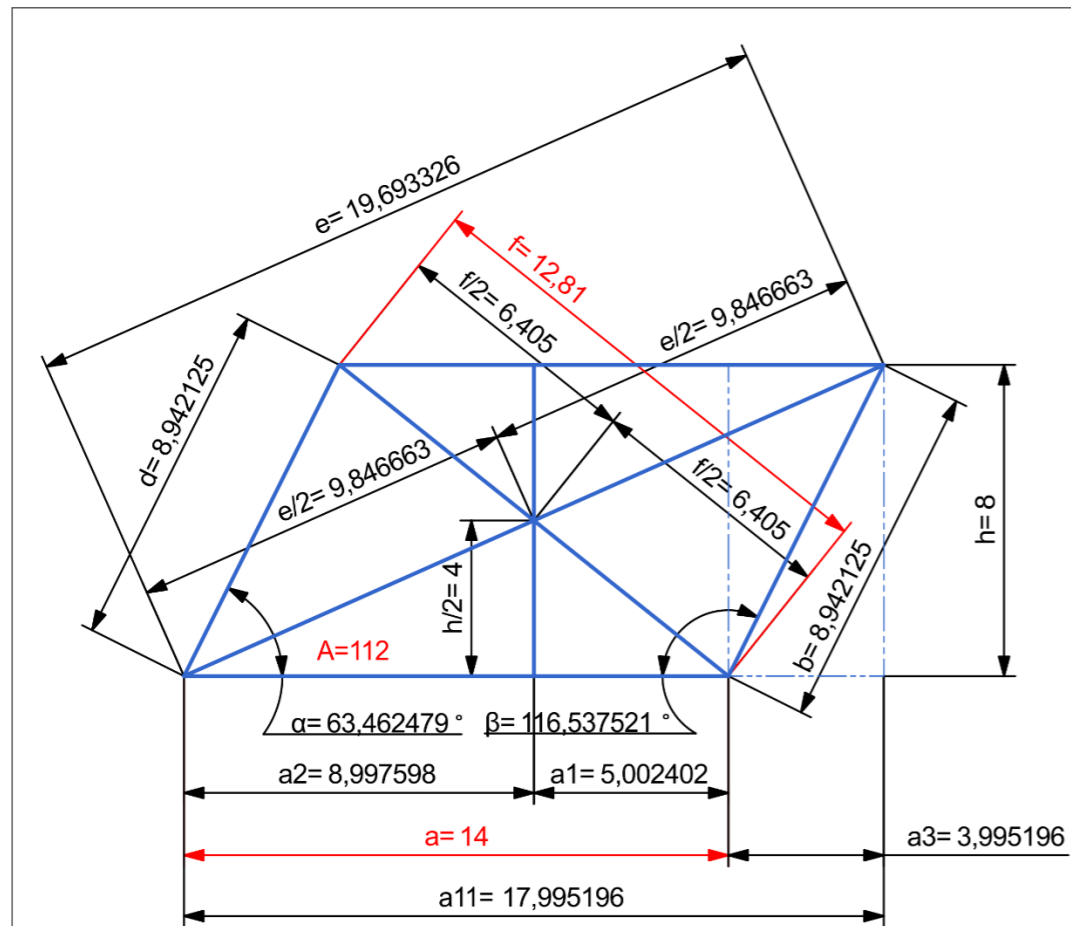
---

$$A = a * h$$

$$A = 12 * 6$$

$$A = 72$$

<https://www.gutefrage.net/frage/mathe-frage-trigonometrie-2>



### Aufgabe 2b

$$h = A / a$$

$$h = 112 / 14$$

$$h = 8$$

---

$$a1 = \text{Wurzel}((f/2)^2 - (h/2)^2)$$

$$a1 = \text{Wurzel}((12,81/2)^2 - (8/2)^2)$$

$$a1 = 5,00240192$$

---

$$a2 = a - a1$$

$$a2 = 14 - 5,00240192$$

$$a2 = 8,99759808$$

---

$$e/2 = \text{Wurzel}(a2^2 + (h/2)^2)$$

$$e/2 = \text{Wurzel}(8,99759808^2 + (8/2)^2)$$

$$e/2 = 9,84666295$$

---

$$e = (e/2) * 2$$

$$e = 9,84666295 * 2$$

$$e = 19,6933259$$

---

$$a11 = \text{Wurzel}(e^2 - h^2)$$

$$a11 = \text{Wurzel}(19,6933259^2 - 8^2)$$

$$a11 = 17,99519616$$

---

$$a3 = a11 - a$$

$$a3 = 17,99519616 - 14$$

$$a3 = 3,99519616$$

---

$$b = \text{Wurzel}(a3^2 + h^2)$$

$$b = \text{Wurzel}(3,99519616^2 + 8^2)$$

$$b = 8,9421246$$

---

$\alpha$  berechnen

$$\text{Geg.: } a = 14 ; f = 12,81 ; d = 8,9421246$$

--

$$\alpha = \text{ARCCOS}((f^2 - d^2 - a^2) / (-2 * d * a))$$

$$\alpha = \text{ARCCOS}((12,81^2 - 8,9421246^2 - 14^2) / (-2 * 8,9421246 * 14))$$

$$\alpha = 63,46247944^\circ$$

---

$\beta$  berechnen

$$\text{Geg.: } b = 8,9421246 ; e = 19,6933259 ; a = 14$$

--

$$\beta = \text{ARCCOS}((e^2 - b^2 - a^2) / (-2 * b * a))$$

$$\beta = \text{ARCCOS}((19,6933259^2 - 8,9421246^2 - 14^2) / (-2 * 8,9421246 * 14))$$

$$\beta = 116,537521^\circ$$