$$(a,b) \underbrace{\int_{c-a}^{b} (c,d)}_{h} h = \sqrt{(c-a)^2 + (b-d)^2}$$

$$h = \sqrt{(c-a)^2 + (b-d)^2}$$

$$h^2 = (c-a)^2 + (b-d)^2$$