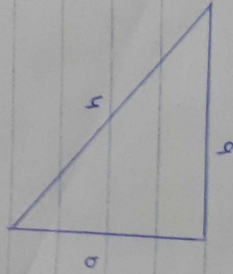


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Solution



Recall, Area of triangle = $\frac{1}{2} b \times a$

$$\partial A = \frac{\partial A}{\partial b} \cdot \partial b + \frac{\partial A}{\partial a} \cdot \partial a$$

$$\partial A = \frac{a}{2} \cdot \partial b + \frac{b}{2} \cdot \partial a$$

$$\partial b = \pm \frac{0.5 \times b}{100} \times \partial a, \quad \partial a = \pm \frac{0.5 \cdot a}{100}$$

$$= \pm \frac{b}{200} = \pm \frac{a}{200}$$

$$\partial A = \frac{ab}{2} \left(\frac{1}{100} \right)''$$

b.

Recall, $h = \sqrt{a^2 + b^2}$

$$\partial h = \frac{\partial h}{\partial a} \cdot \partial a + \frac{\partial h}{\partial b} \cdot \partial b$$

$$h = (a^2 + b^2)^{1/2}, \quad h = U^{1/2}$$

Let $U = a^2 + b^2$

$$\frac{\partial h}{\partial a} = \frac{\partial h}{\partial U} \times \frac{\partial U}{\partial a}$$

$$\frac{\partial h}{\partial a} = \frac{\partial h}{\partial U} \times \frac{\partial U}{\partial a}$$

$$= \frac{1}{2} U^{-1/2} \times 2a$$

$$= \frac{1}{2} U^{-1/2} \times 2b$$

$$\frac{\partial h}{\partial a} = \frac{a}{\sqrt{a^2 + b^2}}''$$

$$\frac{\partial h}{\partial b} = \frac{b}{\sqrt{a^2 + b^2}}''$$

