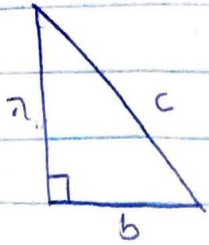


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$$A = \frac{1}{2} ab \quad \sigma_a = \pm 1.5\% \text{ of } a \quad \sigma_b = 1.5\% \text{ of } b$$

$$\frac{\delta A}{\partial a} = \frac{b}{2}, \quad \frac{\delta A}{\partial b} = \frac{a}{2}$$

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

$$\delta A = \frac{b}{2} \left(\pm \frac{1.5a}{100} \right) + \frac{a}{2} \left(\frac{1.5b}{100} \right)$$

$$\delta A = \frac{ab}{2} \left(\frac{1.5}{100} + \frac{1.5}{100} \right)$$

$$\delta A \pm \frac{ab}{2} \left(\frac{1.5 + 1.5}{100} \right)$$

$$\pm \frac{ab}{2} \left(\frac{3}{100} \right)$$

$$2A = 3 \text{ percent of } A$$

$$2) \quad c = \sqrt{a^2 + b^2} = (a^2 + b^2)^{1/2}$$

$$\sigma_c = \frac{\partial c}{\partial a} \cdot \sigma_a + \frac{\partial c}{\partial b} \cdot \sigma_b$$

$$\frac{\partial c}{\partial a} = \frac{1}{2} (a^2 + b^2)^{-1/2} (2a) = \frac{a}{\sqrt{a^2 + b^2}}$$

$$\frac{\partial c}{\partial b} = \frac{1}{2} (a^2 + b^2)^{-1/2} (2b) = \frac{b}{\sqrt{a^2 + b^2}}$$

$$(\sigma) = \frac{\partial a}{c} = \frac{\epsilon \beta}{2w}, \quad \sigma_b = \frac{\beta}{20}$$

$$\sigma_c = \frac{a}{\sqrt{a^2 + b^2}} \left(\pm \frac{\delta a}{2500} \right)$$