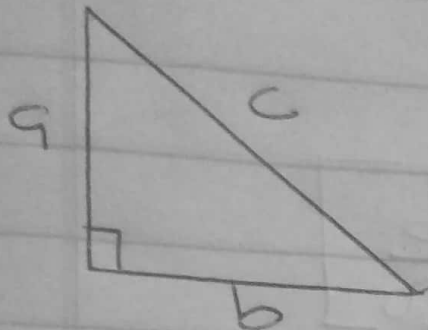


Ogunlaja Adedapo Almarleen  
Civil Engineering  
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$$1) A = \frac{1}{2} ab$$

$$\delta a = \pm 1.5\% \text{ of } a$$

$$\delta b = \pm 1.5\% \text{ of } b$$

$$\frac{\delta A}{A} = \frac{\delta a}{a} + \frac{\delta b}{b}$$

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

$$= \frac{b}{2} \left[ \frac{\pm 1.5a}{100} \right] + \frac{a}{2} \left[ \frac{\pm 1.5b}{100} \right]$$

$$= \pm \frac{ab}{2} \left[ \frac{\pm 1.5}{100} + \frac{\pm 1.5}{100} \right]$$

$$\pm \frac{ab}{2} \left[ \frac{1.5 + 1.5}{100} \right] = \pm \frac{ab}{2} \left[ \frac{3}{100} \right]$$

$$\pm \frac{ab}{2} \text{ of } 3\%$$

$$\text{max error} = \pm \frac{ab}{2} \text{ of } 3\%$$

$$C = \sqrt{a^2 + b^2}, \quad \frac{\delta C}{\delta a} = \frac{1}{2}(2a)(\sqrt{a^2 + b^2})^{-1/2}$$

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

$$\delta a = \pm 1.5\% \text{ of } a$$

$$\frac{\delta C}{\delta b} = \frac{1}{2}(2b)(\sqrt{a^2 + b^2})^{-1/2} = \frac{b}{\sqrt{a^2 + b^2}}, \quad \delta b = \pm 1.5\% \text{ of } b$$

$$\delta C = \frac{\delta C}{\delta a} \cdot \delta a + \frac{\delta C}{\delta b} \cdot \delta b$$

$$= \frac{a}{\sqrt{a^2 + b^2}} \left[ \frac{\pm 3a}{200} \right] + \frac{b}{\sqrt{a^2 + b^2}} \left[ \frac{\pm 3b}{200} \right]$$

$$\pm \frac{3}{200} \left[ \frac{a^2}{\sqrt{a^2 + b^2}} + \frac{b^2}{\sqrt{a^2 + b^2}} \right]$$

$$= \frac{\pm 3}{200} \left[ \frac{a^2 + b^2}{\sqrt{a^2 + b^2}} \right]$$

$$= \frac{\pm 3}{200} \left[ (a^2 + b^2)^{1-1/2} \right]$$

$$= \frac{\pm 3}{200} \left[ \sqrt{a^2 + b^2} \right]$$

$$= \frac{\pm 3}{200} \text{ of } C$$

$$= \pm 1.5\% \text{ of } C$$

$$\text{Max percent} = \pm 1.5\% \text{ of } C$$