$$\frac{\Delta L}{L} = \frac{1\text{ cm}}{10\text{ cm}} = 0.1 = 10\%$$

$$\frac{\Delta w}{w} = \frac{1\text{ cm}}{5\text{ cm}} = 0.2 = 20\%$$

$$A = L\,w = (10\text{ cm})\,(5\text{ cm}) = 50\text{ cm}^2$$

$$\frac{\Delta A}{A} = \frac{\Delta L}{L} + \frac{\Delta w}{w} = 10\% + 20\% = 30\%$$

$$\Delta A = (A)\left(\frac{\Delta A}{A}\right) = (50\text{ cm}^2)\,(30\%) = 15\text{ cm}^2$$

$$A = 50\text{ cm}^2 \pm 15\text{ cm}^2$$