

$$\eta = \frac{\Delta E}{E} = \frac{mgh_1 - mgh_2}{mgh_1} = \frac{h_1 - h_2}{h_1}$$

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$$\frac{\Delta \eta}{\eta} = \Delta \left( \frac{h_1 - h_2}{h_1} \right) = \frac{\Delta h_1 + \Delta h_2}{h_1 - h_2} + \frac{\Delta h_1}{h_1}$$