

Uncertainty Analysis Practice

Solve the problems given in the following table. When calculating uncertainty, calculate the **maximum uncertainty** (i.e. don't use squares and square roots). Report your answer, absolute uncertainty, and % relative uncertainty with the **correct sig figs**. Show your work:

Show work in this column	Calculated value	Absolute uncertainty	Relative uncertainty (show as %)
$q_{\text{tot}} = -(q_{\text{cal}} + q_{\text{surr}})$ $q_{\text{cal}} = 4.345 \pm 0.003 \text{ kJ}$ $q_{\text{surr}} = 3.45 \pm 0.05 \text{ kJ}$	$q_{\text{tot}} =$		
$E = mad$ $m = 1.0 \pm 0.5 \text{ kg}$ $a = 170.0 \pm 0.1 \text{ m/s}^2$ $d = 10.00 \pm 0.01 \text{ m}$	$E =$		
$C = f^2$ $f = 5 \pm 1$	$C =$		
$X = H + I - J$ $H = 14.5 \pm 0.6$ $I = 76.5 \pm 0.4$ $J = 4.0 \pm 0.3$	$X =$		