## Answer on question \#54320, Physics / Other

Question Calculate the change in internal energy of 2 kg of water at 90 degree celcius when it is changed to $3.30 \mathrm{~m}^{3}$ of steam at $100^{\circ} \mathrm{C}$. The whole process occurs at atmospheric pressure. The latent heat of vaporization of water is $2.26 \times 10^{6} \mathrm{~J} / \mathrm{kg}$.

Solution Change of internal energy is equal to heat needed for heating and vaporization:
$\Delta U=Q_{h}+Q_{v}=c m \Delta t+C m=4200 \cdot 2 \cdot 10+2.26 \cdot \cdot 10^{6} \cdot 2=4.604 \cdot 10^{6} J$

