2. Starting at 100.K, how much energy must be added to heat the solid to reach its Melting point.

100K

$T_{melting} = 178.7\,K$

$\Delta T = 178.7\,K - 100\,K = 78.7\,K$

1 mole → 5.72 kJ

2.1552 moles → x

$x = 5.72 \times 2.1552$

$= 12.327744\,kJ$

$\frac{}{1000}$

$= 0.012327744\,J$