1 99.1cm

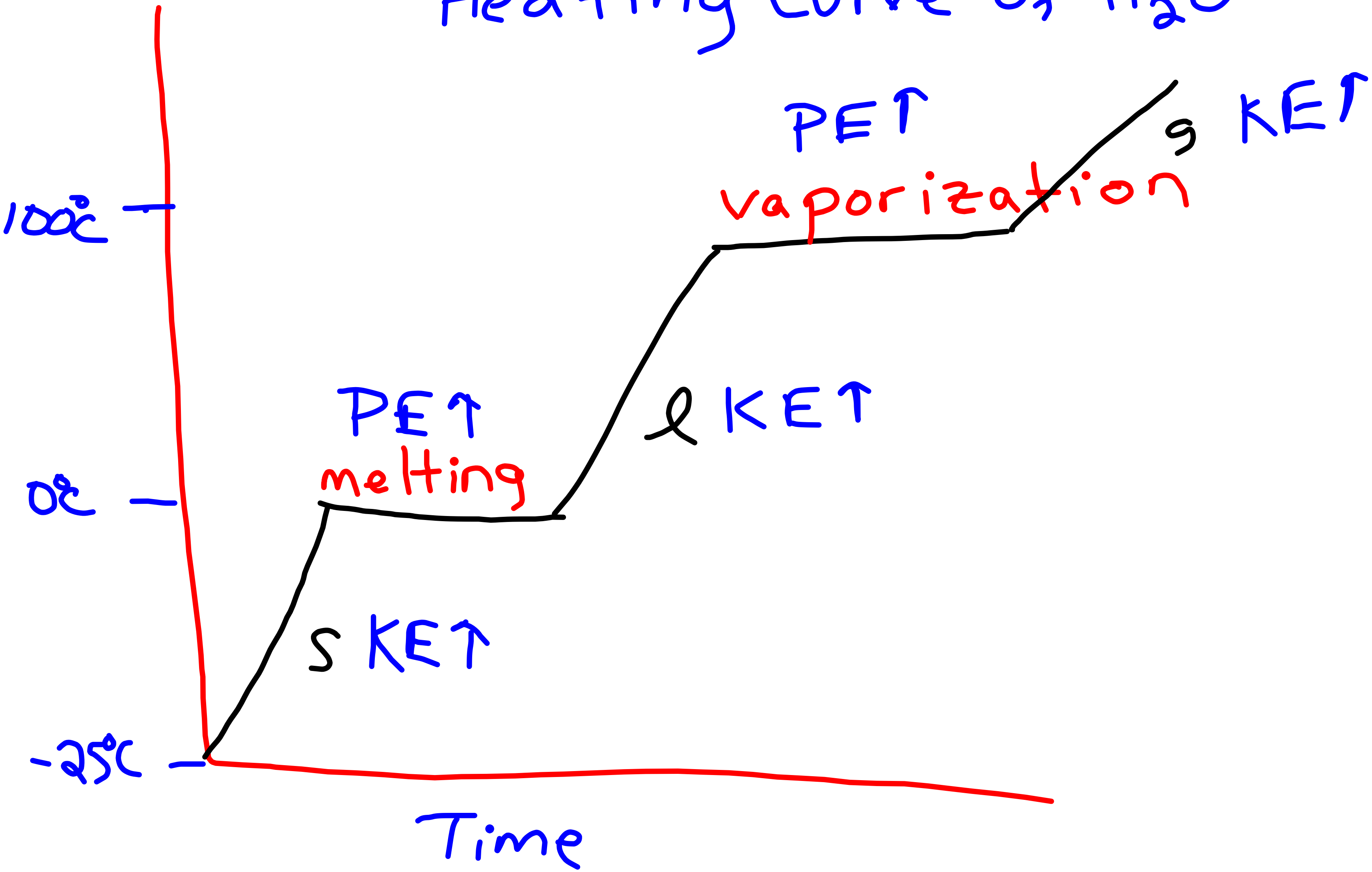
2 1.51g/mL

$$\begin{array}{r} 54.51 \\ 48.462 \\ \hline 6.048\,g \end{array}$$

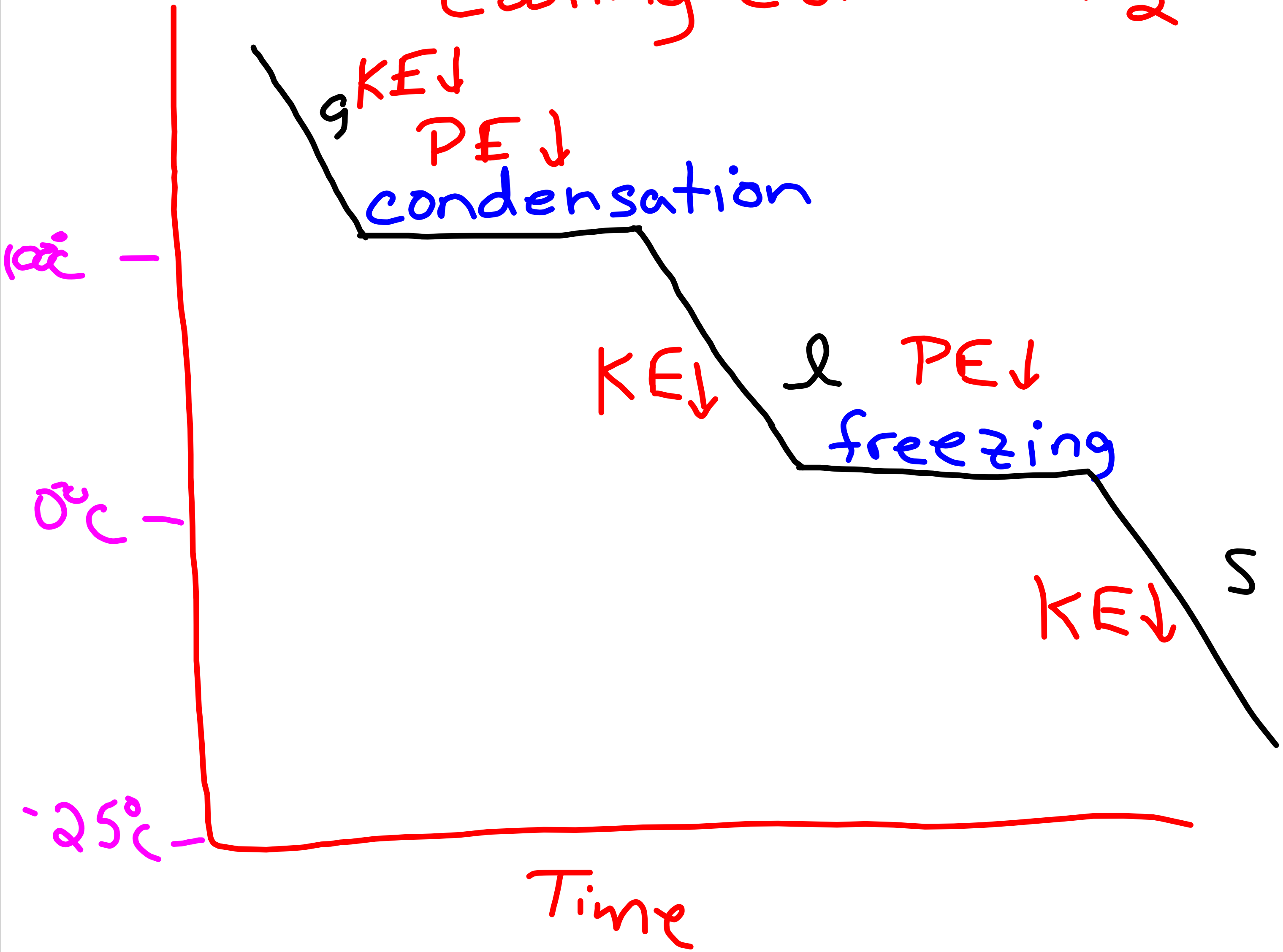
6.05g

$$\frac{6.048\,g}{4.00\,mL} = 1.512$$

Heating Curve of H_2O



Cooling Curve of H_2O



Vaporization:

boiling

evaporating

PE - Potential Energy

Stored Energy

Temp does not change

KE - Kinetic Energy of motion

Any change in temp.

① $q = m\,c\,\Delta T$

heat energy (cal)

mass (g)

heat capacity $\left(\frac{cal}{g \cdot {}^\circ C}\right)$

change in temp (°C)

$$cal = \cancel{g}\left(\frac{cal}{\cancel{g} \cdot \cancel{{}^\circ C}}\right)\cancel{{}^\circ C}$$

/s /l /g or

\g

\l \s

2

$q = m\,H_f$

heat energy (cal)

mass (g)

heat of fusion $\left(\frac{cal}{g}\right)$

melting
freezing
0°C

$cal = \cancel{g}\left(\frac{cal}{\cancel{g}}\right)$

3

$q = m\,H_v$

heat energy (cal)

mass (g)

heat of vaporization

condensation 100°C
vaporization

$$cal = (\cancel{g})\left(\frac{cal}{\cancel{g}}\right)$$

1. $q = mC\Delta T$

$= \underline{(25.0)}(0.1566)\underline{(63.3)}$

247.8195 cal

248 cal

$$\begin{array}{r} 88.3 \\ -\ 25.0 \\ \hline 63.3 \end{array}$$

2. $q = mH_f$

$= (250)(80.0)$

$20,000$ cal

2.0×10^4 cal