Chemistry 161a – Fall 2018 **Chapter 11 Quiz**

Name: _____

Potentially useful information:	$\Delta T_\mathrm{b} = K_\mathrm{b} m \quad \Delta T_\mathrm{f} = K_\mathrm{f} m \quad \text{molality } (m) = \dfrac{n_\text{solute}}{\text{kg solvent}}$

A 151 mg sample of caffeine is dissolved in 10.0 g of camphor $\left(K_\mathrm{f} = 39.7 \frac{^\circ\mathrm{C}}{\mathrm{m}}\right)$, and it decreases the freezing point of camphor by 3.07 °C.

Using the freezing point depression data, show that the molar mass of caffeine ($C_8H_{10}N_4O_2$) is approximately 195 g/mol.