Exam

2

A) 

B) The amount of energy the soda has (relative to 0°C) minus the energy needed to melt the ice as well as the energy needed to heat the ice to 0°C. What is left is the energy the mixture has which can be used to work out temp.

B) $Q_P = .5 \cdot 20 \cdot 4,179$

$Q_P = 41790\ J$

$Q_I = -20 \cdot .1 \cdot 2,100$

$Q_I = 4,200 J$

$Q_F = 3,33 \cdot 10^5 \cdot .1 = 33,300$

$Q_{remaing} = 4290 J$

$4290 = 4,179 \cdot .6\ \Delta T$

$\Delta T = 1.71°C$

$T = 1.71°C$