Name _____ Period _____

College Prep Chemistry of the Earth System

Assignment 7E – Solving Equations with Specific Heat 20 Points

Specific Heat Equation Forms

Specific Heat	$q = c \cdot m \cdot \Delta T$	$c = \frac{q}{m \cdot \Delta T}$	$m = \frac{q}{c \cdot \Delta T}$	$\Delta T = \frac{q}{c \cdot m}$	
Change in T	$\Delta T = T_{final} - T_{ini}$	$T_{final} \quad \Delta T + T_{ini}$	$T_{ini} = T_{final} - \Delta T$		

Solve the following heat capacity problems

$c_{Co} = 0.42 J/^oC$, $m_{Co} = 58.35g$
$T_{ini} = 89.38^oC$, $T_{final} = 51.37^oC$
$\Delta T =$ ____ ^oC, $q =$ ____ J

$\Delta T =$

$\Delta T =$

$q =$

$q =$

$C_{Li} = 3.52 J/^oC$, $m_{Li} = 48.21g$
$T_{ini} = 41.39^oC$, $T_{final} = 52.85^oC$
$\Delta T =$ ____ ^oC, $q =$ ____ J

$\Delta T =$

$\Delta T =$

$q =$

$q =$

$q = C \cdot m \cdot \Delta T$

$m = \frac{q}{C \cdot \Delta T}$

$q = 583.20 J$, $m =$ _____ g,
$c_{Ni} = 0.44 J/g^oC$, $\Delta T = 14.28^oC$

$m = \frac{583.20 J}{0.44 \frac{J}{g \cdot ^oC} \cdot 14.28 ^oC}$

$m = 92.82 g$

$q = -827.42 J$, $m =$ _____ g,
$c_{In} = 0.13 J/g^oC$, $\Delta T = -48.23^oC$

$m =$

$m =$

$q = 1038.29 J$, $m = 84.28g$,
$c_{Ca} = 0.63 J/g^oC$, $\Delta T =$ ____ ^oC

$\Delta T =$

$\Delta T =$

$q = -838.52 J$, $m = 41.59g$,
$c_{Fe} = 0.45 J/g^oC$, $\Delta T =$ ____ ^oC

$\Delta T = \frac{-838.52 J}{0.45 \frac{J}{g \cdot ^oC} \cdot 41.59 g}$

$\Delta T = -44.80 ^oC$ ← lose q (-) lower T (-)

$q = C \cdot m \cdot \Delta T$

$\Delta T = \frac{q}{C \cdot m}$

ΔT and q are both either + OR −