

Topics covered on this quiz:

calorimeters and their use
 names and symbols for elements 1-30
 energy diagrams (graphs)
 specific heat capacity problems

calorimeter problems
 specific heat capacity
 Lab #5: Specific Heat of an Unknown
 Metal

1) (a) What is a calorimeter used for? _____

(b) Draw and label the set-up and parts of a calorimeter:

2) Write out the name of each of the following elements. Spelling counts!

Fe	_____	Sc	_____
Cl	_____	N	_____
B	_____	Be	_____
Zn	_____	Ni	_____
H	_____	O	_____
V	_____	Co	_____
Ti	_____	Mn	_____
Mg	_____	S	_____
Cr	_____	Cu	_____
F	_____	C	_____

3) A 25.0-gram bolt made of an alloy absorbed 250 J of heat as its temperature changed from 25.0 °C to 78.0 °C. What is the specific heat capacity of the alloy? [0.19 J/g·°C]

q = _____

c = _____

m = _____

ΔT = _____

- 4) A sample of tungsten (whose specific heat capacity is $0.1320 \text{ J/g}\cdot\text{°C}$) with an initial temperature of 90.4 °C was dropped into a calorimeter. The mass of the water was 132 grams, and its temperature before adding the tungsten was 20.4 °C . The final temperature of the water was 24.3 °C . What was the mass of the tungsten? [250 g]

SYSTEM ()

q = _____

c = _____

m = _____

T_{final} = _____

T_{initial} = _____

ΔT = _____

SURROUNDINGS ()

q = _____

c = _____

m = _____

T_{final} = _____

T_{initial} = _____

ΔT = _____

- 5) Write out the symbol for each of the following elements. Capitalization counts!

calcium _____ potassium _____ chromium _____

vanadium _____ silicon _____ lithium _____

scandium _____ zinc _____ sodium _____

aluminum _____ manganese _____ titanium _____

helium _____ neon _____ iron _____

copper _____ argon _____ phosphorus _____

nickel _____ cobalt _____

- 6) Draw the energy graphs/diagrams for **exothermic** and **endothermic** changes. Which is which? Be able to label and explain them!

- 7) (a) The specific heat capacity of the element dysprosium is $0.1733 \text{ J/g}\cdot\text{°C}$. If a 10.0 gram sample released 2080 J, what would the change in temperature be? [1200 °C]

q = _____

c = _____

m = _____

ΔT = _____

- (b) If the initial temperature was 2600 °C , what was the final temperature? _____