Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chem R Pd. \_\_\_\_ Heat Calculations

**Heat Calculations (Formula #1)**

**SHOW ALL WORK and USE SIG FIGS** Formula:

1) How much heat was removed from 4500.0 grams of water if the water went from 62.0°C to 32.0°C?

|  |  |  |
| --- | --- | --- |
| Given:  Q =  m =  c =  ΔT = Tf – Ti = | Work: | Answer: (include units) |

2) A sample of water is at 40.0°C. If 2,685 J of heat go into the water from a hot plate, and the temperature of the water rises to 85.5°C, how much water is in the sample?

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| --- | --- | --- |
| Given:  Q =  m =  c =  ΔT = Tf – Ti = | Work: | Answer: (include units) |

3) How much heat is absorbed in a 5650.0 gram sample of water that is heated from 20.0°C to 60.0°C?

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| --- | --- | --- |
| Given:  Q =  m =  c =  ΔT = Tf – Ti = | Work: | Answer: (include units) |

4) If 26,000.0 J of heat are removed from 64.5 grams of water, what is the temperature change of the water?

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| --- | --- | --- |
| Given:  Q =  m =  c =  ΔT = Tf – Ti = | Work: | Answer: (include units) |

5) If a 4,550 gram sample of water at 20.0°C absorbs 16,000 J of heat, what is the final temperature of the water?

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| --- | --- | --- |
| Given:  Q =  m =  c =  ΔT = Tf – Ti = | Work: | Answer: (include units) |

6) a. The sun adds 1000. Joules of heat to the air. If a sample of air has a mass of 50 grams and the temperature rises from 25.0°C to 45.0°C, what is the specific heat capacity of air?

|  |  |  |
| --- | --- | --- |
| Given:  Q =  m =  c =  ΔT = Tf – Ti = | Work: | Answer: (include units) |

b. Which will take longer to heat up on a hot summer day: the ocean water or the air? How do you know?

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