**Practice Problems**

Q=mcΔT (q=energy, m=mass, ΔT= change in temperature, c= specific heat of water)

1. A. Determine the energy given off by the food in calories (chemistry calories).

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| --- | --- |
| Mass of water (g) |   10.35 g |
| Change in temperature of water (°C) |   35.0 °C |
| Specific Heat of Water (cal/g °C) |   1.00 cal/g °C |

B. Determine this amount of energy in food Calories (1000 chemistry calories= 1 food Calorie)

1. A. Determine the energy given off by the food in calories (chemistry calories).

|  |  |
| --- | --- |
| Mass of water (g) |   20.75 g |
| Change in temperature of water (°C) |   3.0 °C |
| Specific Heat of Water (cal/g °C) |   1.00 cal/g °C |

Determine this amount of energy in food Calories (1000 chemistry calories= 1 food Calorie)

1. A. Determine the energy given off by the food in calories (chemistry calories).

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| --- | --- |
| Mass of water (g) |   150 g |
| Change in temperature of water (°C) |   1.5 °C |
| Specific Heat of Water (cal/g °C) |   1.00 cal/g °C |
| Change in mass of food |   3.5 g |

B. Determine this amount of energy in food Calories (1000 chemistry calories= 1 food Calorie)

C. Determine the Calories per gram (Calories/grams)

1. A. Determine the energy given off by the food in calories (chemistry calories).

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| --- | --- |
| Mass of water (g) |   73.5 g |
| Change in temperature of water (°C) |   17.1 °C |
| Specific Heat of Water (cal/g °C) |   1.00 cal/g °C |
| Change in mass of food |   4.78 g |

B. Determine this amount of energy in food Calories (1000 chemistry calories= 1 food Calorie)

C. Determine the Calories per gram (Calories/grams)

1. A. Determine the energy given off by the food in calories (chemistry calories).

|  |  |
| --- | --- |
| Mass of water (g) |   15.7 g |
| Change in temperature of water (°C) |   23.6 °C |
| Specific Heat of Water (cal/g °C) |   1.00 cal/g °C |
| Change in mass of food |   10.4 g |

B. Determine this amount of energy in food Calories (1000 chemistry calories= 1 food Calorie)

C. Determine the Calories per gram (Calories/grams)

1. A. Determine the energy given off by the food in calories (chemistry calories).

|  |  |
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| Mass of water (g) |   19.3 g |
| Change in temperature of water (°C) |   8.3 °C |
| Specific Heat of Water (cal/g °C) |   1.00 cal/g °C |
| Change in mass of food |   4.6 g |

B. Determine this amount of energy in food Calories (1000 chemistry calories= 1 food Calorie)

C. Determine the Calories per gram (Calories/grams)