Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Specific Heat or Phase Change?**

*Determine whether each question is a phase change or change in temperature. Then answer the question using the correct equation. Fill in the boxes with the correct information. Use Q=mc∆t (c=1c/g) or Q=mL*

*(Remember latent heat [L] of ice->water= 80cal/g and water->steam= 540cal/g)*

1. Calculate the energy (in calories) absorbed by 20 grams of water that warms from 30˚C to 90˚C.

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| --- | --- | --- | --- |
| ***Specific Heat or Phase Change?*** | ***Evidence inside equation*** | ***Q=mc∆t or Q=mL?*** | ***Your Answer*** |
|  |  |  |  |

1. Calculate the energy needed to change 50 grams of ice to water.

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| ***Specific Heat or Phase Change?*** | ***Evidence inside equation*** | ***Q=mc∆t or Q=mL?*** | ***Your Answer*** |
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1. Calculate the energy absorbed by 10 grams of water that warms from 50˚C to 90˚C.

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| --- | --- | --- | --- |
| ***Specific Heat or Phase Change?*** | ***Evidence inside equation*** | ***Q=mc∆t or Q=mL?*** | ***Your Answer*** |
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1. Calculate the energy absorbed by 20 grams of 100˚C water that is turned into 100˚C steam.

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| ***Specific Heat or Phase Change?*** | ***Evidence inside equation*** | ***Q=mc∆t or Q=mL?*** | ***Your Answer*** |
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1. Calculate the energy absorbed by 50 grams of 0˚C ice that is turned into 0˚C water.

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| ***Specific Heat or Phase Change?*** | ***Evidence inside equation*** | ***Q=mc∆t or Q=mL?*** | ***Your Answer*** |
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1. Calculate the energy released by 100 grams of water that cools from 50˚C to 5˚C.

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| ***Specific Heat or Phase Change?*** | ***Evidence inside equation*** | ***Q=mc∆t or Q=mL?*** | ***Your Answer*** |
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1. Calculate the energy absorbed by 25 grams of water that warms from 50˚C to 60˚C.

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| ***Specific Heat or Phase Change?*** | ***Evidence inside equation*** | ***Q=mc∆t or Q=mL?*** | ***Your Answer*** |
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1. Calculate the energy needed to melt 100 grams of 0˚C ice and then heat it to 30˚C.

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| --- | --- | --- | --- |
| ***Specific Heat or Phase Change?*** | ***Evidence inside equation*** | ***Q=mc∆t or Q=mL?*** | ***Your Answer*** |
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1. Calculate the energy released by 20 grams of 100˚C steam that condenses into water and then cools to 0˚C.

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| --- | --- | --- | --- |
| ***Specific Heat or Phase Change?*** | ***Evidence inside equation*** | ***Q=mc∆t or Q=mL?*** | ***Your Answer*** |
|  |  |  |  |

1. Calculate the energy needed to melt 10 grams of ice and convert it into steam.

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| --- | --- | --- | --- |
| ***Specific Heat or Phase Change?*** | ***Evidence inside equation*** | ***Q=mc∆t or Q=mL?*** | ***Your Answer*** |
|  |  |  |  |