Basic Problem:

Determine the energy needed to melt 30 g of ice at -15 degrees Celsius and convert it to steam at 120 degrees Celsius:

**Step 1** : Draw the Heating Curve

**Step 2**: Determine the amount of heat needed to Raise the Ice to 0 degrees Celsius.

**Step 3**: Determine the amount of energy needed to melt the Ice at 0 Degrees Celsius

**Step 4:**  How much heat is required to raise the temperature of water from 0 – 100 degrees Celsius?

Step 5: How much heat will it take to evaporate the water at 100 degrees Celsius?

Step 6: How much heat will it take to raise the temperature to 120 degrees Celsius?

Step 7: How much total heat was required to produce the steam?

Basic Problem:

Determine the energy needed to melt 50 g of ice at -18 degrees Celsius and convert it to steam at 110 degrees Celsius:

**Step 1** : Draw the Heating Curve

**Step 2**: Determine the amount of heat needed to Raise the Ice to 0 degrees Celsius.

**Step 3**: Determine the amount of energy needed to melt the Ice at 0 Degrees Celsius

**Step 4:**  How much heat is required to raise the temperature of water from 0 – 100 degrees Celsius?

Step 5: How much heat will it take to evaporate the water at 100 degrees Celsius?

Step 6: How much heat will it take to raise the temperature to 110 degrees Celsius?

Step 7: How much total heat was required to produce the steam?

Basic Problem:

Determine the energy needed to melt 100 g of ice at -20degrees Celsius and convert it to steam at 150 degrees Celsius:

**Step 1** : Draw the Heating Curve

**Step 2**: Determine the amount of heat needed to Raise the Ice to 0 degrees Celsius.

**Step 3**: Determine the amount of energy needed to melt the Ice at 0 Degrees Celsius

**Step 4:**  How much heat is required to raise the temperature of water from 0 – 100 degrees Celsius?

Step 5: How much heat will it take to evaporate the water at 100 degrees Celsius?

Step 6: How much heat will it take to raise the temperature to 150 degrees Celsius?

Step 7: How much total heat was required to produce the steam?

Basic Problem:

Determine the energy needed to melt 5 g of ice at -12 degrees Celsius and convert it to steam at 101 degrees Celsius:

**Step 1** : Draw the Heating Curve

**Step 2**: Determine the amount of heat needed to Raise the Ice to 0 degrees Celsius.

**Step 3**: Determine the amount of energy needed to melt the Ice at 0 Degrees Celsius

**Step 4:**  How much heat is required to raise the temperature of water from 0 – 100 degrees Celsius?

Step 5: How much heat will it take to evaporate the water at 100 degrees Celsius?

Step 6: How much heat will it take to raise the temperature to 101 degrees Celsius?

Step 7: How much total heat was required to produce the steam?

Basic Problem:

Determine the energy needed to melt 75 g of ice at -50 degrees Celsius and convert it to steam at 150 degrees Celsius:

**Step 1** : Draw the Heating Curve

**Step 2**: Determine the amount of heat needed to Raise the Ice to 0 degrees Celsius.

**Step 3**: Determine the amount of energy needed to melt the Ice at 0 Degrees Celsius

**Step 4:**  How much heat is required to raise the temperature of water from 0 – 100 degrees Celsius?

Step 5: How much heat will it take to evaporate the water at 100 degrees Celsius?

Step 6: How much heat will it take to raise the temperature to 150 degrees Celsius?

Step 7: How much total heat was required to produce the steam?

Basic Problem:

Determine the energy needed to melt 30 g of ice at -11 degrees Celsius and convert it to steam at 111 degrees Celsius:

**Step 1** : Draw the Heating Curve

**Step 2**: Determine the amount of heat needed to Raise the Ice to 0 degrees Celsius.

**Step 3**: Determine the amount of energy needed to melt the Ice at 0 Degrees Celsius

**Step 4:**  How much heat is required to raise the temperature of water from 0 – 100 degrees Celsius?

Step 5: How much heat will it take to evaporate the water at 100 degrees Celsius?

Step 6: How much heat will it take to raise the temperature to 111 degrees Celsius?

Step 7: How much total heat was required to produce the steam?

Basic Problem:

Determine the energy needed to melt 30 g of ice at -30 degrees Celsius and convert it to steam at 140 degrees Celsius:

**Step 1** : Draw the Heating Curve

**Step 2**: Determine the amount of heat needed to Raise the Ice to 0 degrees Celsius.

**Step 3**: Determine the amount of energy needed to melt the Ice at 0 Degrees Celsius

**Step 4:**  How much heat is required to raise the temperature of water from 0 – 100 degrees Celsius?

Step 5: How much heat will it take to evaporate the water at 100 degrees Celsius?

Step 6: How much heat will it take to raise the temperature to 140 degrees Celsius?

Step 7: How much total heat was required to produce the steam?

Basic Problem:

Determine the energy needed to freeze 20 g of steam at 115 degrees Celsius and convert it to ice at -18 degrees Celsius:

**Step 1** : Draw the Heating Curve

**Step 2**: Determine the amount of heat needed to decrease the steam to 100 degrees Celsius.

**Step 3**: Determine the amount of energy needed to condense the steam at 100 Degrees Celsius.

**Step 4:**  How much heat is required to lower the temperature of water from 100 - 0 degrees Celsius?

Step 5: How much heat will it take to freeze the water at 0 degrees Celsius?

Step 6: How much heat will it take to lower the temperature to -18 degrees Celsius?

Step 7: How much total heat was required to produce the ice?

Basic Problem:

Determine the energy needed to freeze 150 g of steam at 110 degrees Celsius and convert it to ice at -10 degrees Celsius:

**Step 1** : Draw the Heating Curve

**Step 2**: Determine the amount of heat needed to decrease the steam to 100 degrees Celsius.

**Step 3**: Determine the amount of energy needed to condense the steam at 100 Degrees Celsius.

**Step 4:**  How much heat is required to lower the temperature of water from 100 - 0 degrees Celsius?

Step 5: How much heat will it take to freeze the water at 0 degrees Celsius?

Step 6: How much heat will it take to lower the temperature to -10 degrees Celsius?

Step 7: How much total heat was required to produce the ice?