Water and X

	Cp solid (J/g°C)	Cp liquid (J/g°C)	Cp gas (J/g°C)	Heat of fusion (J/g)	Heat of vaporization (J/g)	MP (°C)	BP (°C)
X	0.8	1.1	0.9	210	1800	-30	70
Water	2.06	4.18	2.02	334	2260	0	100

1. If a 28g sample of water absorbs 1230 J of heat when warming from 34°C, what is its final temperature?
2. A piece of metal weighing 61 g at 98.0 °C is put it into 100.0 mL of water (initially at 24 °C). The water reached a final temperature of 28 °C. Calculate the specific heat of the metal.
3. A sample of X weighing 20 g is at 65.0 °C when it is dumped into 40 ml of water (initially at 20 °C). Find the final temperature.
4. How much energy is needed to vaporize 25g of water?
5. How much energy does it take to warm 12g of ice at -40°C to 115°C?
6. Draw the heating curve for #5.
7. 80 g of ice is at 0°C. How much energy is needed to warm it to 40°C?
8. How much water can be vaporized with 30 kJ of energy?
9. How much X can be vaporized with 30 kJ of energy?
10. What amount of energy is needed to warm 100 g of X from 10°C to 90°C?