

Name _____
Period _____

Measuring Heat

Date _____
Mr. Klein

1. The number of joules needed to raise the temperature of 10 grams of water from 20°C to 30°C is
(1) 42 (3) 420
(2) 20 (4) 4.2
2. How many joules of heat energy are absorbed when 100 ml of water is heated from 20°C to 50°C?
(1) 12600 joules (3) 126 joules
(2) 10 joules (4) 0.1 joule
3. When a quantity of electricity is converted to heat, the heat energy produced is measured in
(1) volts (3) joules
(2) amperes (4) degrees
4. When 20 ml of water is cooled from 99°C to 10°C, the number of joules of heat released is
(1) 10 (3) 74.76
(2) 20 (4) 7476
5. What is the total number of joules of heat that must be absorbed to change the temperature of 100 grams of H₂O from 25°C to 30°C?
(1) 420 (3) 10500
(2) 2100 (4) 3,000
6. How many joules are equivalent to 35 kilojoules?
(1) 0.035 joules (3) 3,500 joules
(2) 0.35 joules (4) 35,000 joules
7. If 100. calories are added to 20. grams of water at 30.°C, what will be the final temperature of the water?
(1) 25°C (3) 40.°C
(2) 35°C (4) 50.°C
8. When 200 grams of water cools from 50.°C to 25°C, the total amount of heat energy released by the water is
(1) 42,000 joules (3) 8 joules
(2) 21,000 joules (4) 4 joules
9. What is the heat of vaporization of water in joules per gram?
(1) 4.2 (3) 334
(2) 273 (4) 2259
10. How much heat is required to convert 35 g of liquid water at 100 °C to vapor?
(1) 4.2 joules (3) 14,700 joules
(2) 2259 joules (4) 79,065 joules
11. How much heat is released by the condensation of 5 g of water vapor at 100 °C?
(1) 11295 joules (3) 4.2 joules
(2) 1670 joules (4) 21000 joules
12. How much heat is involved in the melting of 90 g of solid water at 0° C?
(1) 334 joules (3) 1 billion joules
(2) 1492 joules (4) 30,060 joules
13. Select the appropriate answer to describe the heat involved in the freezing of 50 g of liquid water at 0° C.
(1) 112, 950 joules released
(2) 112,950 joules absorbed
(3) 16, 700 joules absorbed
(4) 16,700 joules released
14. The heat of fusion for ice is 334 joules per gram. Adding 334 joules of heat to one gram of ice at STP will cause the ice to
(1) increase in temperature
(2) decrease in temperature
(3) change to water at a higher temperature
(4) change to water at the same temperature