1. If an exothermic reaction releases 86.5 kJ, how many kilocalories of energy are released?

2. If an endothermic process absorbs 256 J, how many kilocalories are absorbed?

3. An exothermic reaction releases 325,000 calories. Convert this energy to kJ.

4. A fast-food item contains 544 nutritional Calories. Convert this energy to calories and joules.

5. An endothermic process absorbs 138 kJ. How many calories of heat are absorbed?
6. A 155 g sample of an unknown substance was heated from 25.0°C to 40.0°C. In the process, the substance absorbed 5696 J of energy. What is the specific heat of the substance?

7. The temperature of a sample of water increases from 20.0°C to 46.6°C as it absorbs 5650 J of heat. What is the mass of the sample?

8. How many joules of heat are lost by 3580 kg granite as it cools from 41.2°C to -12.9°C? The specific heat of granite is 0.803 J/(g°C).

9. How much heat is absorbed by a 2000 kg granite boulder as energy from the sun causes its temperature to change from 10°C to 29°C? The specific heat of granite is 0.803 J/(g°C).

10. A sample of silver with a mass of 63.3 g is heated to a temperature of 384.4 K and placed in a container of water at 290.0 K. The final temperature of the silver and water is 292.4 K. Assuming no heat loss, what mass of water was in the container? The specific heat of water is 4.184 J/(g°C) and of silver is 0.24 J/(g°C).