10.4. Although material can be recycled, only very limited amount are bottles can be made from virgin plastic at a lower cost than recycling. And there are legal restrictions on using recycled material for food and beverage containers, so it is not more desirable than "Reduce" and "Reuse".

10.1. Recycling also need human resource and energy resource. If we can reduce the wasting at the beginning or reuse the material, it would be better than recycling.

10.10
(a) nonspontaneous
A human pyramid collapse into a group of checkers
(b) spontaneous
(c) nonspontaneous
A steaming hot coffee in a room becomes cold.


10.14. Exothermic is more likely to be spontaneous
Examples: 1 pure sodium reacts in water.
2. Iron rusting.
Context Example:
Freezing, it is exothermic but nonspontaneous.

10.20
\[
\frac{1}{8} \div \frac{1}{8} = 64
\]

Most probable roll: 9.

10.26
(a) positive (b) positive (c) negative

10.28
(a) negative (b) negative (c) negative (d) negative (e) positive
10.34 (a) Yes
   (b) Yes
   (c) Pressure?
   (d) Yes.
   (e) No.
   (f) Molecules move faster

10.35
Entropy of the universe always positive.

10.50
\[ \text{CO}_2(g) + 2\text{H}_2\text{O}(l) \rightarrow \text{CH}_4(g) + 2\text{O}_2(g) \]
\[ 2 \cdot 205 + 186.2 - 2 \cdot 69.9 \| - 213.6 \]
= 242.78