Study Guide for Section 8.1; Relations and Functions

Identify the domain and range of the relation.

1. \[
\begin{array}{c|cccc}
  x & -5 & 2 & -6 & -1 \\
  y & 4 & 2 & -2 & -5 \\
\end{array}
\]

a. domain: 4, 2, –2, –5, 0
   range: 4, 2, –2, –5, 0
b. domain: 4, 2, –2, –5, 0
   range: –5, 2, –6, –1, 4
c. domain: –5, 2, –6, –1, 4
   range: 4, 2, –2, –5, 0
d. domain: –5, 2, –6, –1, 4
   range: –5, 2, –6, –1, 4

Use a mapping diagram to determine whether the relation is a function.

2. \((-4, -3), (-3, 2), (8, 2), (9, 6)\)

3. Which relation is a function?
   a. \[
   \begin{array}{c|cccc}
   x & 1 & 2 & 3 & 4 \\
   y & 3 & 6 & 9 & 12 \\
   \end{array}
   \]
   b. \[
   \begin{array}{c|cccc}
   x & 1 & 1 & 1 & 1 \\
   y & 4 & 3 & 2 & 1 \\
   \end{array}
   \]
   c. \[
   \begin{array}{c|ccc}
   x & 3 & 3 & 1 \\
   y & 4 & 3 & 2 \\
   \end{array}
   \]
   d. \[
   \begin{array}{c|ccc}
   x & 3 & 2 & 5 \\
   y & 4 & 4 & 1 \\
   \end{array}
   \]

Tell whether the relation is a function. Explain your answer.

4. \((2, -2), (2, -3), (3, -2), (4, -2)\)

5. \[
\begin{array}{c|cccc}
  \text{Input} & -4 & -2 & -1 & 0 \\
  \text{Output} & -6 & -3 & -3 & -6 \\
\end{array}
\]

Tell whether the graph represents a function. Write Yes or No.

6.

7.
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Answer Section

1. C

2. It is a function.

3. A
4. The relation is not a function. The input value 2 is paired with two different output values.
5. The relation is a function. Each input value has exactly one output value.
6. Yes
7. No