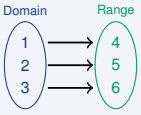
Domain and Range

Name: _____	Date: _____	Score: _____ / 18

Quick Review and Helpful Hints

The *domain* is the set of all input (x) values; the *range* is the set of all output (y) values. For a list of ordered pairs, collect the x-values for the domain and the y-values for the range (drop repeats, list in order).

▷ **Example:** Find the domain and range of $\{(1,4),(2,5),(3,6)\}$.
Work: Domain is the x-values $\{1,2,3\}$. Range is the y-values $\{4,5,6\}$.
★ **Answer:** $D=\{1,2,3\}$, $R=\{4,5,6\}$



$D=\{1,2,3\}$, $R=\{4,5,6\}$.

Practice Problems

Find the domain or range as directed.

1. Domain of $\{(1,2),(3,4),(5,6)\}$ _____
2. Range of $\{(1,2),(3,4),(5,6)\}$ _____
3. Domain of $\{(0,1),(2,3),(4,5)\}$ _____
4. Range of $\{(0,1),(2,3),(4,5)\}$ _____
5. Domain of $\{(-1,2),(0,2),(1,2)\}$ _____
6. Range of $\{(-1,2),(0,2),(1,2)\}$ _____
7. Domain of $\{(5,10),(6,20)\}$ _____
8. Range of $\{(5,10),(6,20)\}$ _____
9. Domain of $\{(7,1),(8,2),(9,3)\}$ _____
10. Range of $\{(7,1),(8,2),(9,3)\}$ _____
11. Domain of $\{(-3,0),(-2,1),(-1,2)\}$ _____
12. Range of $\{(-3,0),(-2,1),(-1,2)\}$ _____
13. Range of $y=x+2$ for $x\in\{0,1,2\}$ _____
14. Range of $y=2x$ for $x\in\{1,2,3\}$ _____

Word Problems

15. A function pairs the days {Mon, Tue, Wed} with temperatures. What is the domain? _____
16. The points $(1,10),(2,20),(3,30)$ show sales. What is the range? _____
17. For $y=3x$ with $x\in\{0,1,2\}$, list the range. _____
18. A tutoring table lists ordered pairs $\{(4,4),(5,5),(6,6)\}$ for practice day and score. What is the domain of the relation? _____

Answer Keys

1. $\{1, 3, 5\}$	**7.** $\{5, 6\}$	**13.** $\{2, 3, 4\}$
2. $\{2, 4, 6\}$	**8.** $\{10, 20\}$	**14.** $\{2, 4, 6\}$
3. $\{0, 2, 4\}$	**9.** $\{7, 8, 9\}$	**15.** {Mon, Tue, Wed}
4. $\{1, 3, 5\}$	**10.** $\{1, 2, 3\}$	**16.** $\{10, 20, 30\}$
5. $\{-1, 0, 1\}$	**11.** $\{-3, -2, -1\}$	**17.** $\{0, 3, 6\}$
6. $\{2\}$	**12.** $\{0, 1, 2\}$	**18.** $\{4, 5, 6\}$

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Collect the x-values: $\{1, 3, 5\}$. So the final answer is $\{1, 3, 5\}$.

2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Collect the y-values: $\{2, 4, 6\}$. So the final answer is $\{2, 4, 6\}$.

3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The x-values are $\{0, 2, 4\}$. So the final answer is $\{0, 2, 4\}$.

4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The y-values are $\{1, 3, 5\}$. So the final answer is $\{1, 3, 5\}$.

5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The x-values are $\{-1, 0, 1\}$. So the final answer is $\{-1, 0, 1\}$.

6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is All outputs are 2, so the range is $\{2\}$. So the final answer is $\{2\}$.

7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The x-values are $\{5, 6\}$. So the final answer is $\{5, 6\}$.

8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The y-values are $\{10, 20\}$. So the final answer is $\{10, 20\}$.

9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The x-values are $\{7, 8, 9\}$. So the final answer is $\{7, 8, 9\}$.

10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The y-values are $\{1, 2, 3\}$. So the final answer is $\{1, 2, 3\}$.

11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The x-values are $\{-3, -2, -1\}$. So the final answer is $\{-3, -2, -1\}$.

12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The y-values are $\{0, 1, 2\}$. So the final answer is $\{0, 1, 2\}$.

13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $0 + 2, 1 + 2, 2 + 2 = \{2, 3, 4\}$. So the final answer is $\{2, 3, 4\}$.

14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $2(1), 2(2), 2(3) = \{2, 4, 6\}$. So the final answer is $\{2, 4, 6\}$.

15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The domain is the set of inputs: the three days. So the final answer is {Mon, Tue, Wed}.

16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The range is the set of outputs: $\{10, 20, 30\}$. So the final answer is $\{10, 20, 30\}$.

17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $3(0), 3(1), 3(2) = \{0, 3, 6\}$. So the final answer is $\{0, 3, 6\}$.

18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The x-values are $\{4, 5, 6\}$. So the final answer is $\{4, 5, 6\}$.

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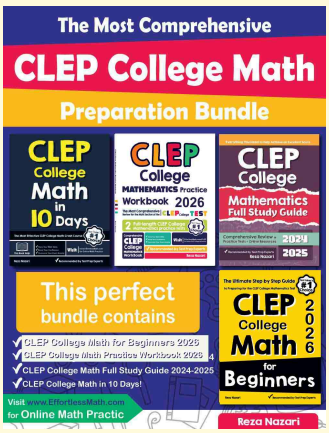

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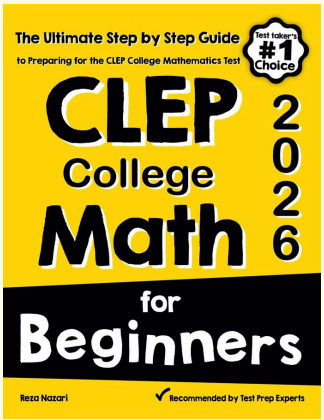

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