Function Tables: Complete Input-Output Rules and Match Tables

Original tasks 1, 2, 3 / complete keys

Task 1

Rule: output = 4 times input minus 2. Complete the table for inputs 1, 2, 5, and 6.

Answer: Pairs: (1,2), (2,6), (5,18), (6,22).

Reason: For input 1: 4 times 1 = 4, then 4 minus 2 = 2. For input 2: 8 minus 2 = 6. For input 5: 20 minus 2 = 18. For input 6: 24 minus 2 = 22.

Check: Substitute input 5 again: 4 times 5 = 20, 20 minus 2 = 18, which matches the recorded output.

Task 2

A table shows pairs (2,9), (3,13), (4,17), (5,21). Which rule matches: output = 4 times input plus 1, or output = 3 times input plus 3? Show a test.

Answer: The matching rule is output = 4 times input plus 1.

Reason: Test input 2: 4 times 2 plus 1 = 9, matching; 3 times 2 plus 3 = 9 also matches. Test input 3: 4 times 3 plus 1 = 13, matching; 3 times 3 plus 3 = 12, not matching, so the second rule is eliminated. Test input 4: 4 times 4 plus 1 = 17, matching.

Check: Verify the last pair: input 5 gives 4 times 5 plus 1 = 21, matching the table.

Task 3

Rule: output = input divided by 2, then add 7. Complete the table for inputs 2, 4, 10, and 12. Use the same unit for inputs and outputs.

Answer: Pairs: (2,8), (4,9), (10,12), (12,13).

Reason: For input 2: 2 divided by 2 = 1, then 1 plus 7 = 8. For input 4: 2 plus 7 = 9. For input 10: 5 plus 7 = 12. For input 12: 6 plus 7 = 13.

Check: Recompute input 10: 10 divided by 2 = 5, 5 plus 7 = 12, matching the table.

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Task 4

A table shows pairs (1,6), (2,11), (3,16), (4,21). A classmate claims the rule is output = 5 times input plus 1. Test the claim on all four pairs and state whether it matches.

Answer: The rule matches all four pairs, so it is consistent with the table.

Reason: Input 1: 5 times 1 plus 1 = 6. Input 2: 10 plus 1 = 11. Input 3: 15 plus 1 = 16. Input 4: 20 plus 1 = 21. Every pair agrees.

Check: Choose input 3 and recompute: 5 times 3 = 15, 15 plus 1 = 16, matching the table's output.

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Source rubric / reflection

- [ ] Correctly applies the operation order in the rule for every input.
- [ ] Records each output in the same row as its input.
- [ ] Tests candidate rules against every displayed pair when matching.
- [ ] Shows at least one verification calculation.
- [ ] Uses consistent units and labels columns.
- [ ] For diagrams, keeps x-height between baseline and midline and accepts any legible letter style within that band.

Reflection: What did you check, what did you change, and what will you try next?