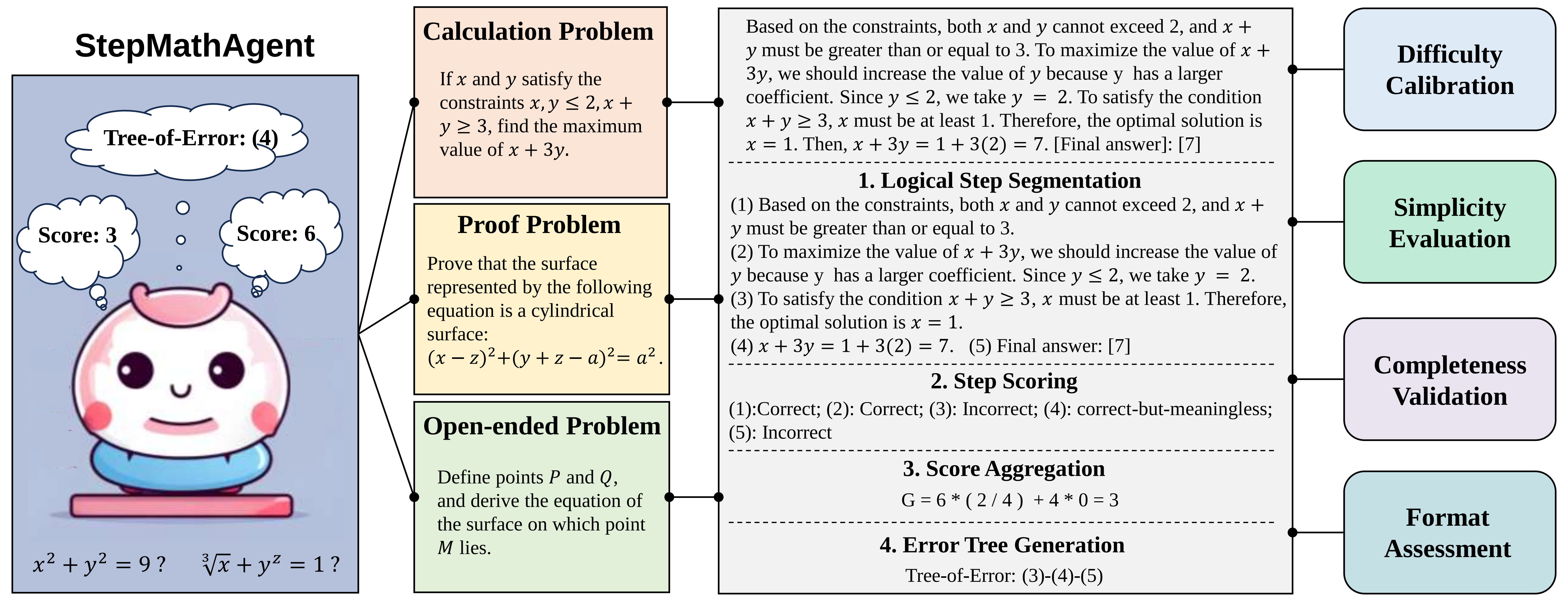

StepMathAgent
Tree-of-Error: (4)
Score: 3
Score: 6
$x^2 + y^2 = 9$?
$\sqrt[3]{x} + y^z = 1$?
Calculation Problem
If x and y satisfy the constraints $x, y \leq 2, x + y \geq 3$, find the maximum value of $x + 3y$.
Proof Problem
Prove that the surface represented by the following equation is a cylindrical surface: $(x-z)^2 + (y+z-a)^2 = a^2$.
Open-ended Problem
Define points P and Q, and derive the equation of the surface on which point M lies.
Based on the constraints, both x and y cannot exceed 2, and $x + y$ must be greater than or equal to 3. To maximize the value of $x + 3y$, we should increase the value of y because y has a larger coefficient. Since $y \leq 2$, we take $y = 2$. To satisfy the condition $x + y \geq 3$, x must be at least 1. Therefore, the optimal solution is $x = 1$. Then, $x + 3y = 1 + 3(2) = 7$. [Final answer]: [7]
1. Logical Step Segmentation
(1) Based on the constraints, both x and y cannot exceed 2, and $x + y$ must be greater than or equal to 3.
(2) To maximize the value of $x + 3y$, we should increase the value of y because y has a larger coefficient. Since $y \leq 2$, we take $y = 2$.
(3) To satisfy the condition $x + y \geq 3$, x must be at least 1. Therefore, the optimal solution is $x = 1$.
(4) $x + 3y = 1 + 3(2) = 7$. (5) Final answer: [7]
2. Step Scoring
(1):Correct; (2): Correct; (3): Incorrect; (4): correct-but-meaningless; (5): Incorrect
3. Score Aggregation
G = 6 * (2 / 4) + 4 * 0 = 3
4. Error Tree Generation
Tree-of-Error: (3)-(4)-(5)
Difficulty Calibration
Simplicity Evaluation
Completeness Validation
Format Assessment