WONDERLEARNERZ PRIMARY ACADEMY â€¢ PRACTICE & ASSESSMENT WORKSHEET

Mathematical Reasoning and Puzzles - Worksheet 2

Grade 3 | Mathematics | Ch 19: Mathematical Reasoning and Puzzles | Total Marks: 19 | Time: 30 Minutes

Student Name: _____ **Roll / ID No:** _____

Grade / Section: _____ **Date:** _____ **Score:** _____ / 19

Instructions: Section A (Q1-Q4): Choose the correct option (A, B, C, or D). Section B (Q5-Q9): Write your exact one-word or numerical answer. Section C & D (Q10-Q15): Write your detailed answers, corrections, and show all working steps neatly in the space provided.

Q1. In a 3x3 magic square using digits 1 to 9, what is the sum of any row, column, or diagonal? [1 Mark]

( ) A. 15
( ) B. 12
( ) C. 18
( ) D. 20

Q2. A function machine rule is: 'Multiply input by 4 and add 3'. What is the output for input 5? [1 Mark]

( ) A. 23
( ) B. 20
( ) C. 25
( ) D. 27

Q3. If 1 Star + 1 Star + 1 Star = 27, what is the value of 1 Star? [1 Mark]

( ) A. 9
( ) B. 8
( ) C. 7
( ) D. 6

Q4. If 1 Circle + 1 Square = 20 and 1 Circle = 14, what is the value of 1 Square? [1 Mark]

( ) A. 6
( ) B. 7
( ) C. 5
( ) D. 8

Q5. At the Escape Room Quest, a balance scale shows that 2 identical brass weights balance a 50g weight and a 30g weight. What is the weight of one brass weight? [1 Mark]

Q6. A lock combination riddle: 'I am a 3-digit number. My hundreds digit is 3. My tens digit is twice my hundreds digit. My ones digit is 1 less than my tens digit.' What is the code? [1 Mark]

Q7. An input-output conveyor machine converts: Input 2 -> 8, Input 4 -> 16, Input 6 -> 24. What will the machine output when the input is 9? [1 Mark]

Q8. A magic square row contains the numbers [8], [?], and [6]. If the magic sum is 21, what number is missing in the middle? **[1 Mark]**

Q9. Find the missing input: The function rule is 'Subtract 7, then multiply by 2'. The output is 16. What was the input? **[1 Mark]**

Q10. Oliver claims that 7, 7, 7 can never form a row in a magic square with sum 21 because magic squares must always have 3 different numbers. Is Oliver correct? **[1 Mark]**

Q11. Maya solves an input-output puzzle where Input 2 -> 5 and Input 3 -> 6. She announces the rule is '+ 3'. Then Input 4 gives 7, but for Input 5 the table shows 10. What did Maya overlook? **[1 Mark]**

Q12. Why must the center number of a 3x3 magic square with digits 1 to 9 always be 5? **[2 Marks]**

Q13. If Scale 1 shows: 1 Triangle = 2 Squares, and Scale 2 shows: 1 Square = 3 Circles, how many Circles will balance 1 Triangle? **[2 Marks]**

Q14. I am thinking of a 2-digit number. It is an odd multiple of 7. The sum of its digits is 10. What is my number? **[2 Marks]**

Q15. In a farmyard puzzle, there are 10 heads and 28 legs among chickens (2 legs) and cows (4 legs). How many cows are there in the farmyard? **[2 Marks]**