# Logical Reasoning

## Solution

**1.** **Answer: (D)**

**If 4 * 9 % 2 = 47**

⇒ 49 – 2 = 47

**9 * 0 % 6 = 84**

⇒ 90 – 6 = 84

Then,

⇒ 5 * 3 % 7 = ?

⇒ 53 - 7 = ?

⇒ 46 = ?

**2.** **Answer: (D)**

1/4/3 = 254 ⇒ 1 + 1 = 2; 4 + 1 = 5; 3 + 1 = 4

3/6/8 = 479 ⇒ 3 + 1 = 4; 6 + 1 = 7; 8 + 1 = 9

5/2/7 = ? ⇒ 5 + 1 = 6; 2 + 1 = 3; 7 + 1 = 8

? = 638

**3.** **Answer: (D)**

**Logic:** first number × third number + second number × third number

9 θ 11 α 2 → 9 × 2 + 11 × 2 = 40

13 θ 12 α 3 → 13 × 3 + 12 × 3 = 75

**40 θ 41 α 5 → 40 × 5 + 41 × 5 = 405**

Hence, 405 is the correct answer.

**4.** **Answer: (A)**

The logic followed here is,

8 α 48 → 8 × (8 - 2) → 48

12 α 120 → 12 × (12 - 2) → 120

15 α 195 → 15 × (15 - 2) → 195

Same will be followed to answer the question,

19 α A → 19 × (19 - 2) → 323

Hence, '323' is the correct answer.

**5.** **Answer: (A)**

Logic: Second digit is taken as power of the first digit in the number and "%" is taken as subtraction and "^" is taken as addition.

Putting the codes in the given equation we have:

$6^2 - 2^2 + 3^2 = 36 - 4 + 9 = 41$ and

$7^2 – 5^2 + 2^2 = 49 – 25 + 4 = 28$

Similarly,

$5^2 – 3^2 + 1^2 = 25 – 9 + 1 = 17$

Hence, 17 is the correct answer.

**6.** **Answer: (C)**

| Symbol | A | B |
|---|---|---|
| Meaning | ÷ | × |

6 A 11 B 33 = 18 can be written as

6 ÷ 11 × 33 = 18

4 B 18 A 9 = 8 can be written as

4 × 18 ÷ 9 = 8

Similarly,

3 A 5 B 35 can be written as

3 ÷ 5 × 35 = 21

Hence, 21 is the correct answer.

**7.** **Answer: (A)**

Here, if we consider the '$' as '×' and '&' as '+' then only the equations become true.

Like, 1 $ 9 & 5 = 1 × 9 + 5 = 14;

2 & 4 $ 3 = 2 + 4 × 3 = 2 + 12 = 14;

Hence, 7 $ 9 & 9 = 7 × 9 + 9 = 63 + 9 = 72

**8.** **Answer: (D)**

| Symbol | Meaning |
|---|---|
| * | + |
| # | × |

Based on this information, the answers for the equation can be obtained.

(8 + 9) × 3 = 51, (12 + 6) × 4 = 72

Similarly,

(13 + 11) × 6 = 144

Hence, '144' is the correct answer.

**9.** **Answer: (D)**

The logic follow is,

1) 38 # 49 = 24

= (3 + 8) + (4 + 9)

= 11 + 13

= 24

2) 96 # 51 = 21

= (9 + 6) + (5 + 1)

= 15 + 6

= 21

Similarly,

3) 87 # 78 = ?

= (8 + 7) + (7 + 8)

= 15 + 15 = 30

**10.** **Answer: (C)**
The pattern follow here is,
$(27 \times 4) - (27 + 4) = 77$;
$(31 \times 9) - (31 + 9) = 239$;
Similarly,
$(21 \times 6) - (21 + 6) = 99$
Hence, 99 is the correct answer.

**11.** **Answer: (A)**
Here,
1) 11 # 2 @ 6 = 78
$= (11 + 2) \times 6$
$= 13 \times 6$
$= 78$
2) 15 # 4 @ 8 = 152
$= (15 + 4) \times 8$
$= 152$
Similarly,
3) 17 # 6 @ 7 = ?
$= (17 + 6) \times 7$
$= 23 \times 7 = 161$

**12.** **Answer: (B)**
The pattern followed here is,

| Numbers | 2 | 5 | 8 | 11 |
|---|---|---|---|---|
| As per the given logic | 0 | 0 + 1 = 1 | 1 + 3 = 4 | 4 + 5 = 9 |

Hence, 9 is the correct answer.

**13.** **Answer: (C)**
The pattern followed is
17 * 36 = 1 + 7 + 3 + 6 = 17;
41 * 56 = 4 + 1 + 5 + 6 = 16;
Similarly, 41 * 32 = 4 + 1 + 3 + 2 = 10;

**14.** **Answer: (D)**
The pattern followed is,
14 $ 8 =14 × 8 – 21 = 91;
18 $ 4 = 18 × 4 – 21= 51;
So, 21 $ 9 = 21 × 9 – 21 = 168;

**15.** **Answer: (D)**

**16.** **Answer: (D)**
**$7^2$ A 7 B 9 = 16**
$\Rightarrow 7^2 \div 7 + 9 = 7 + 9 = 16$
**$5^2$ A 5 B 7 = 12**
$\Rightarrow 5^2 \div 5 + 7 = 5 + 7 = 12$
**$9^2$ A 3 B 8 = ?**
$\Rightarrow 9^2 \div 3 + 8 = 27 + 8 = 35 = ?$

**17.** **Answer: (B)**
Logic here is,
**$\Rightarrow 4^2$ θ 2 α 16 = 146**
$\Rightarrow (16 \times 10) + 2 - 16 = 146$
$\Rightarrow 162 - 16 = 146$
$\Rightarrow 146 = 146$
**$\Rightarrow 3^2$ θ 5 α 18 = 77**
$\Rightarrow (9 \times 10) + 5 - 18 = 77$
$\Rightarrow 95 - 18 = 77$
$\Rightarrow 77 = 77$
**$\Rightarrow 4^2$ θ 4 α 39 = ?**
$\Rightarrow (16 \times 10) + 4 - 39 = ?$
$\Rightarrow 164 - 39 = ?$
$\Rightarrow 125 = 125$

**18.** **Answer: (B)**
$\Rightarrow 7 + 3 = 10 \times 6 = 60$
$9 + 6 = 15 \times 11 = 165$
Then $11 + 5 = 16 \times 10 = 160$.

**19.** **Answer: (C)**
6 # 8 = $(6)^2 + (8)^2 = 100$ i.e, $(10)^2$
5 # 12 = $(5)^2 + (12)^2 = 169$ i.e, $(13)^2$
Thus, 9 # 40 = $(9)^2 + (40)^2 = 1681$ i.e, $(41)^2$

**20.** **Answer: (B)**
$(7 + 4) = 11$
$\Rightarrow 11 \times (11 - 1) = 11 \times 10 = 110$
$19 + 12 = 31$
$\Rightarrow 31 \times (31 - 1) = 31 \times 30 = 930$
Likewise, $16 + 9 = 25$
$\Rightarrow 25 \times (25 - 1) = 25 \times 24 = 600$