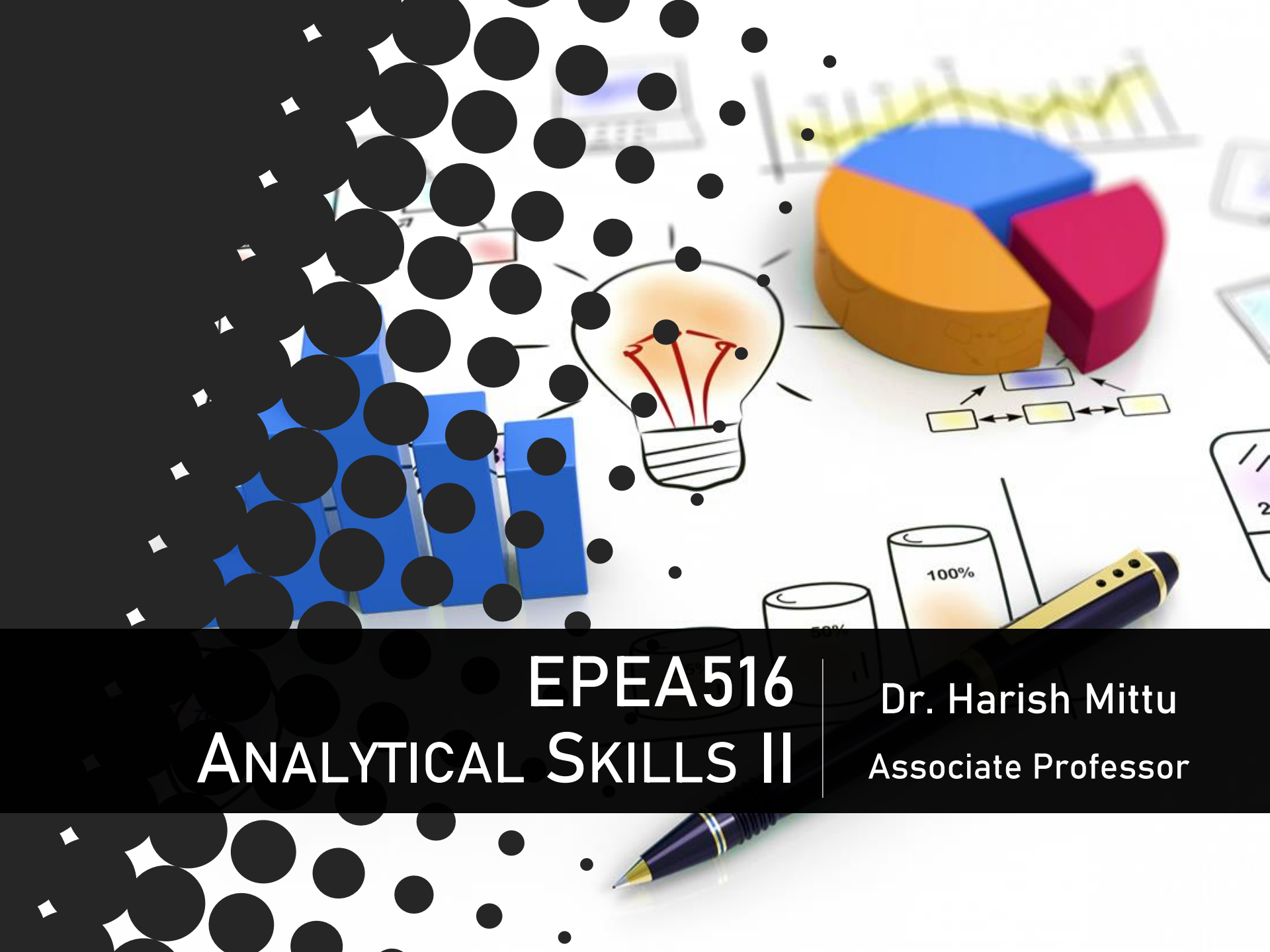


EPEA516
Analytical Skills II

Dr. Harish Mittu
Associate Professor

Learning Outcomes

After this lecture, you will be able to

- develop understanding about the basics of insert the missing character,
- analyze different types of insert the missing character,
- solve various problems relating to insert the missing character.

Insert The Missing Character

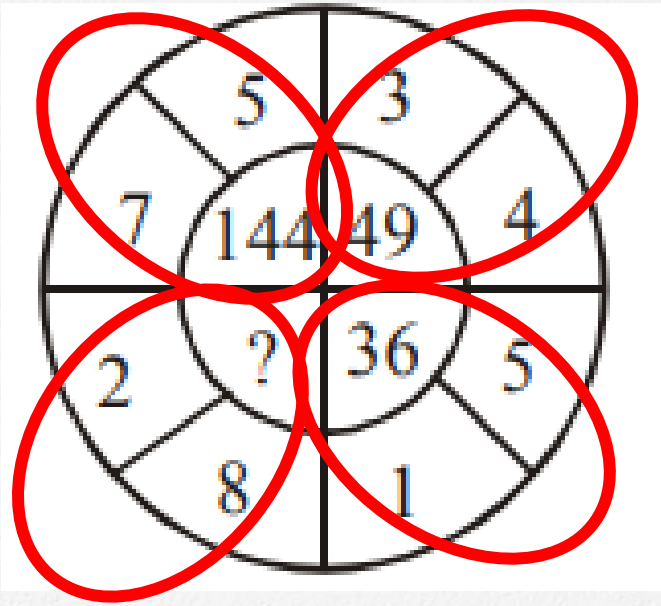
- Figure/Set of Figures/Arrangement/Matrix
- Certain Characteristics
  - Numbers/Letters/Group
  - Combination of Letters/Numbers
- Missing Character

Insert The Missing Character

- Set of Figures
- Set of Arrangements
- Set of Matrix

Problem

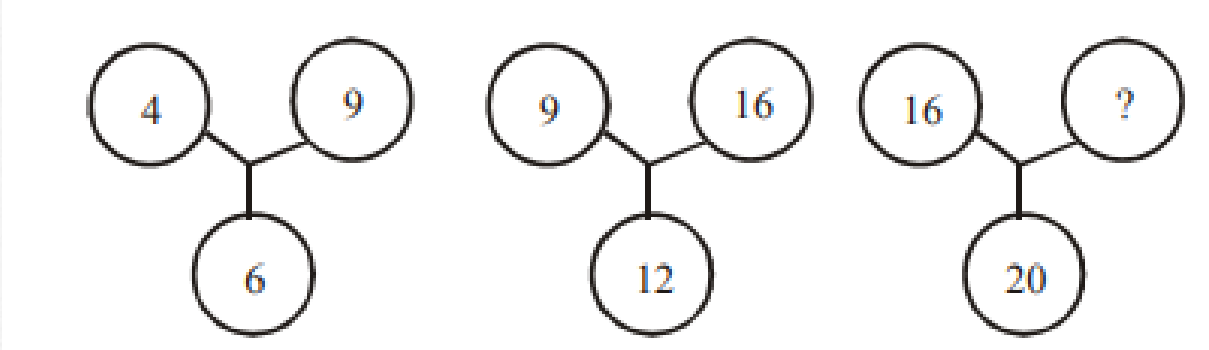
- What number should replace the question mark?



- (a) 64
- (b) 68
- (c) 82
- (d) 100
- Explanation:
- Required number = $(2 + 8)^2 = 100$

Problem

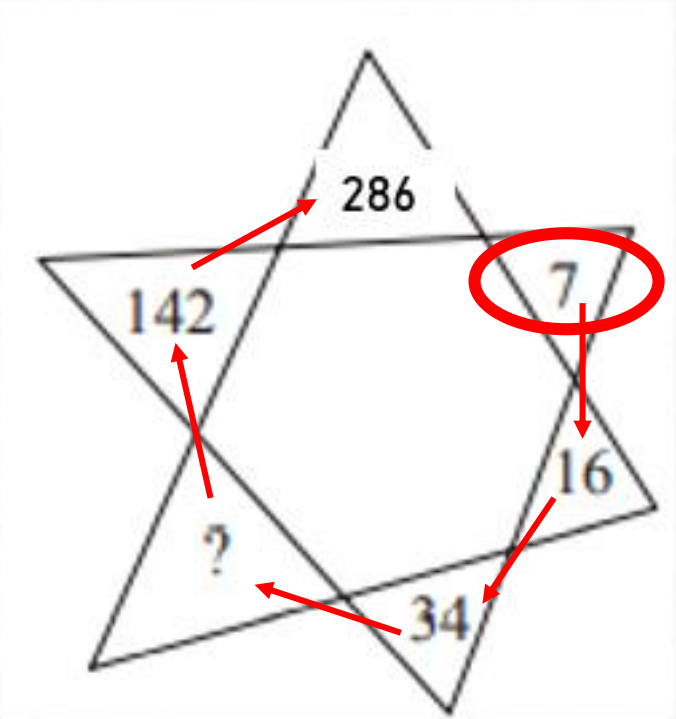
- What number should replace the question mark?
- (a) 25
- (b) 40
- (c) 50
- (d) 60



- Explanation: $\sqrt{4 \times 9} = \sqrt{36} = 6$
- $\sqrt{9 \times 16} = \sqrt{144} = 12$
- $\sqrt{16 \times x} = \sqrt{16x} = 20$ or ~~$16\ x = 400$~~ ^{25} or $x = 25$

Problem

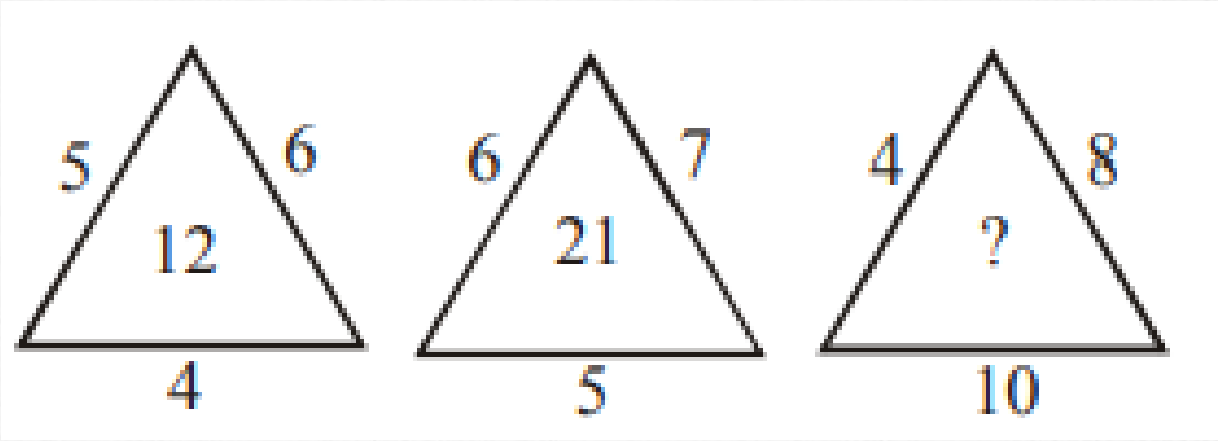
- What number should replace the question mark?
- (a) 66
- (b) 68
- (c) 70
- (d) 72
- Explanation:



- Starting with 7, Double the number and add 2.

Problem

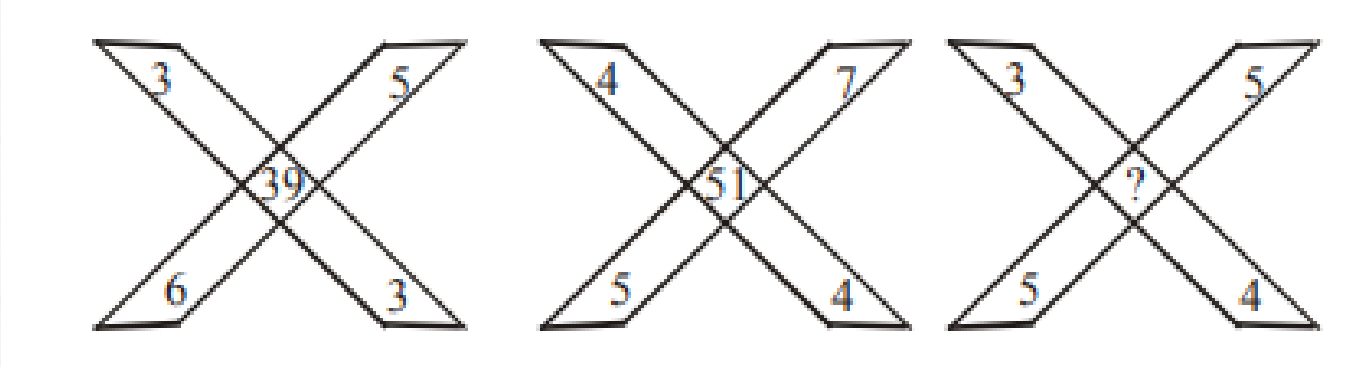
- What number should replace the question mark?
- (a) 320
- (b) 32
- (c) 22
- (d) 14



- Explanation: $(\frac{5 \times 6 \times 4}{10}) = (\frac{120}{10}) = 12$; $(\frac{6 \times 7 \times 5}{10}) = (\frac{210}{10}) = 21$
- $(\frac{4 \times 8 \times 10}{10}) = (\frac{320}{10}) = 32$

Problem

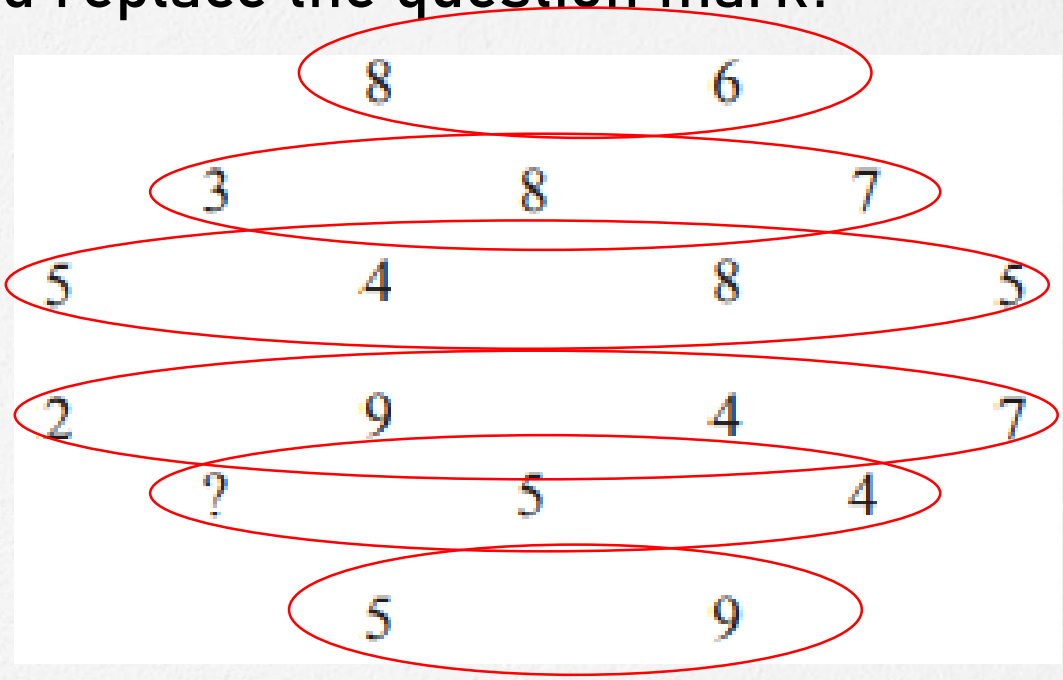
- What number should replace the question mark?
- (a) 45
- (b) 47
- (c) 35
- (d) 37



- Explanation:
- 3 × 3 + 6 × 5 = 39 and 4 × 4 + 5 × 7 = 51
- 3 × 4 + 5 × 5 = 37

Problem

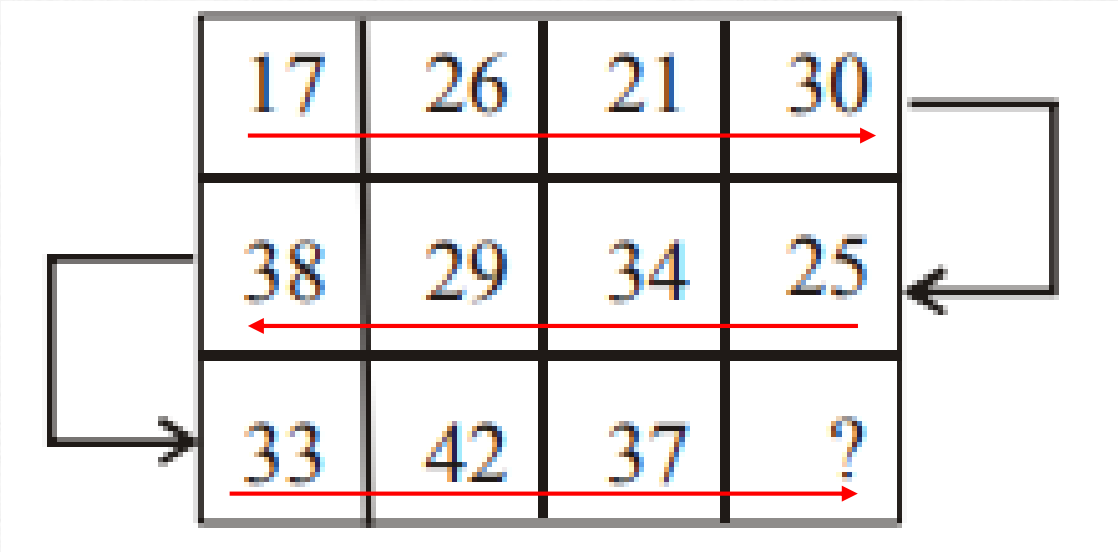
- What number should replace the question mark?



- (a) 9
- (b) 8
- (c) 7
- (d) 6
- Explanation:
- Total of rows having two & four numbers = 14 & 22
- Total of rows having three numbers =18

Problem

- What number should replace the question mark?
- (a) 42
- (b) 32
- (c) 46
- (d) 45



- Explanation:
- Beginning at 17, +9 and –5.

Problem

- What number should replace the question mark?
- 4322 : 48
- 4172 : 56
- 7615 : ?
- (a) 49 (b) 52 (c) 210 (d) 336
- Explanation: 4 x 3 x 2 x 2 = 48; 4 x 1 x 7 x 2 = 56
- 7 × 6 × 1 × 5 = 210

Problem

- What number should replace the question mark?

- (a) 144
- (b) 120
- (c) 100
- (d) 96

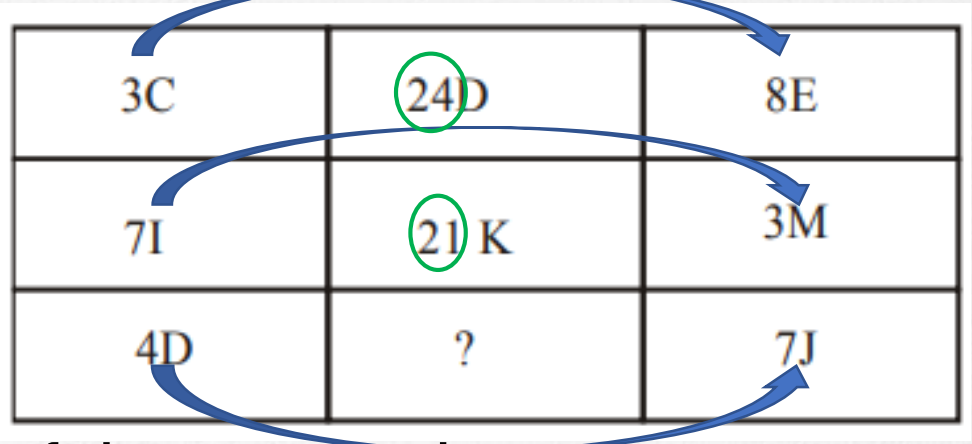
11	3	49
5	19	?
7	13	100

- Explanation - $\left(\frac{11+3}{2}\right)^2 = (7)^2 = 49, \left(\frac{7+13}{2}\right)^2 = (10)^2 = 100$

- $\left(\frac{5+19}{2}\right)^2 = (12)^2 = 144$

Problem

- What number should replace the question mark?
- (a) 11 E (b) 28 G
- (c) 35 I (d) 48 F



- Explanation
- Number is the product of the two numbers.
- 1st row-letters are consecutive (CDE).
- 2nd row, letters are +1 (IJKLM).
- 3rd row, the letters are + 2 forward (DEFGHIJ).
- 4 × 7 = 28 and G.

Problem

- What number should replace the question mark?

8	9	3	69
7	5	6	29
4	7	9	19
9	8	4	?

- (a) 86 (b) 98
- (c) 68 (d) 43
- Explanation
- (8 × 9) – 3 = 69
- (7 × 5) – 6 = 29
- (4 × 7) – 9 = 19
- (9 × 8) – 4 = 68

Problem

- What number should replace the question mark?
- (a) 4
- (b) 1
- (c) -1
- (d) -2

0	−1	−2
1	0	−1
2	?	0

Problem

- What number should replace the question mark?
- (a) 80
- (b) 70
- (c) 60
- (d) 50

5	9	7
4	5	3
1	6	8
40	100	?

- Explanation: $(5)^2 + (4)^2 - 1 = 25 + 16 - 1 = 41 - 1 = 40$
- $(9)^2 + (5)^2 - 6 = 81 + 25 - 6 = 106 - 6 = 100$
- $(7)^2 + (3)^2 - 8 = 49 + 9 - 8 = 58 - 8 = 50$

Conclusion

- Insert The Missing Character
  - Figure/Set of Figures/Arrangement/Matrix
  - Certain Characteristics
  - Missing Character

Summary

- Insert The Missing Character
    - Set of Figures
    - Set of Arrangements
    - Set of Matrix

That’s all for now…