



## MENTAL ABILITY TEST (MAT) HINTS & SOLUTIONS

1. On looking (i) & (ii)  
Good sing represent pie sie therefore pason represent mie.  
On looking (ii) & (iii)  
Good lyrics represents rie sie.  
∴ love represent tie good can be either rie or sie and accordingly (3) option follow that is rie mie tie

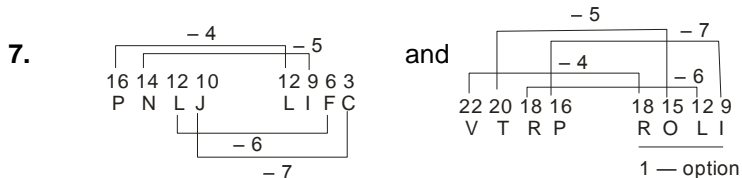
2. ab\_ab\_aaa\_bbaaa\_bbbb  
→ ab/aabb/aaabbb/aaaabbbb  
∴ (2) option abba

3. Take from

4. Option 1

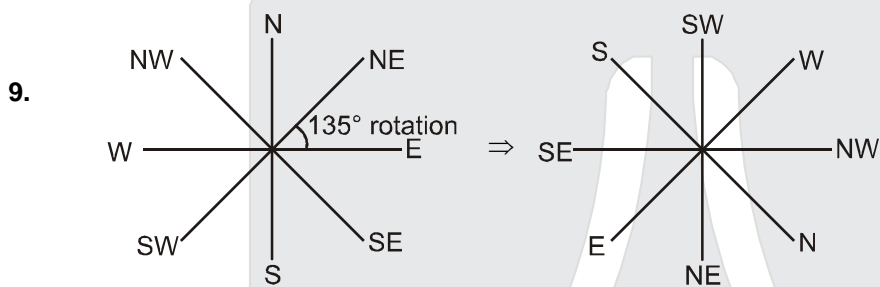
5. 
$$\begin{array}{r} A\ 4\ B\ C \\ \times\ C \\ \hline 1\ A\ 1\ D\ C \end{array}$$
  
C can be 1 or 5 or 6. But C cannot be equal to 1 because we get 5 digits in Answer.  
C is 5 or 6  
By looking into the solution  
(4) A = 2                      B = 3                      C = 5                      D = 7

6.  $\triangle \rightarrow 1$   
 $\bigcirc \rightarrow 3$   
 $\square \rightarrow 6$   
Acc<sup>n</sup> to options, Option (3)  
  
 $8 + 1 = 3 + 6$   
 $9 = 9$

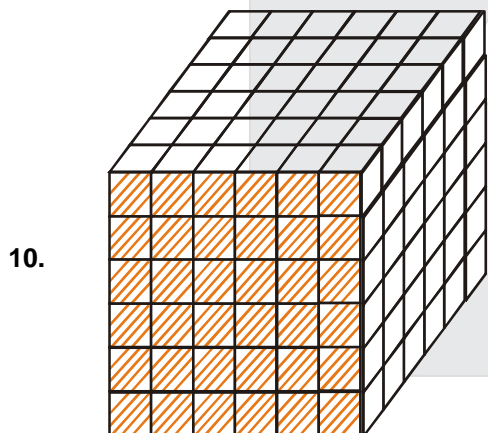


8. Option (1) is correct.

Because it complete one rotation to reach its starting point.



On comparison W becomes SE.



Cube with number face painted =  $(n - 2)^3 \Rightarrow (6 - 2)^3 \Rightarrow (4)^3 = 64$  (Option 3).

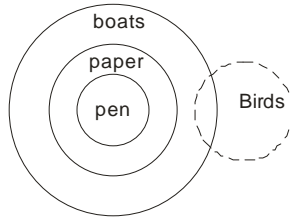
11.

5 6 E F 22	, 10 11 J K 42	, 7 8 G H 24	, 22 23 V W 90	, 9 10 I J 38
5 + 6 = 11 Now 11 × 2 = 22	10 + 11 = 21 21 × 2 = 42	7 + 8 = 15 15 × 2 = 30	22 + 23 = 45 45 × 2 = 90	9 + 10 = 19 19 × 2 = 38

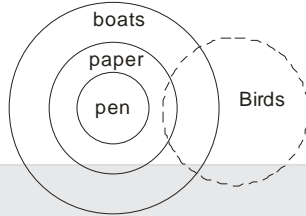
∴ GH 24 is the odd among all.

Option 2.

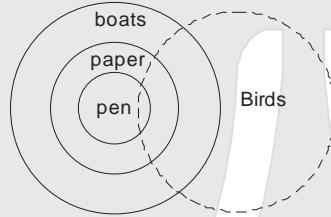
12. Case – I



Case – II

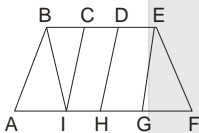


Case – III



- Conclusion A. Some boats are pens {follow in all}  
 B. Some birds are paper {Not followed by 1}  
 C. None of the pens are birds {Not followed by 3}
- ∴ Only A follows.

13.

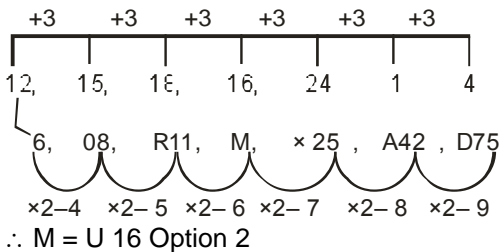


- |            |            |            |
|------------|------------|------------|
| (1) ABCIA  | (2) CDHIC  | (3) DEGHD  |
| (4) BDHIB  | (5) CEGIC  | (6) DEFHD  |
| (7) ABDHA  | (8) BEGIB  | (9) CEFIC  |
| (10) ABEGA | (11) BEFIB | (12) ABEFA |

14.

255, 3610, 4915, M, 8125  
 $5^2(5)$ ,  $6^2(10)$ ,  $7^2(15)$ ,  $8^2(20)$ ,  $9^2(25)$   
 ∴ M = 6420 Ans.

15.



16.

Sum of Column = 14  
 $7 + 2 + 1 + 4 = 14$   
 $3 + 8 + 1 + 2 = 14$   
 $6 + 5 + 2 + 1 = 14$

$$2 + 4 + 4 + M = 14 \Rightarrow M = 4 \text{ Option 3}$$

17. (3)

The expression is  $56 \div (6 + 8) \times 4 - 1 = 15$ .

18. (3)

$$100 - 81 \div 27 + 3 \times 6 = 115.$$

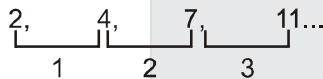
19. (2)

68 satisfies all the given conditions.

20. (3)

(1, 9), (2, 8), (3, 7), (4, 6), (5, 5), (6, 4), (7, 3), (8, 2), (9, 1).

21. Number of regions formed by lines follows the pattern



Hence 11 is the answer.

22.

I	II
IV	III

If square is divided in 4 region equally then any region with 2 points will be having a property such that distance between them is less than  $\sqrt{2}$ .

This means, we need minimum of 5 points such that atleast one of the region has two points and thus there will always be a pair of points such that distance between them is less than  $\sqrt{2}$ .

23. Given

Sum of digits of x is 15.

So, x is divisible by 3 but not by 9.

and unit's digit is 6.

so x is even number.

Option (2) x is divisible by 6 but not by 9.

24. Average age of A, B and C is 43 years.

So,  $\frac{A+B+C}{3} = 43.$

$A + B + C = 129$

Statement-I Age of C is 65 years.

I is sufficient as  $129 - 65 = 64$  sum of (B + C).

Option (1) is answer.

25 -26.

Teacher	Subject	Period
E	B	1
A	M	4
D	P	2
C	C	3
B	H	5

25. Option (3)

26. Option (4)

27. Radius of cylinder = 12 cm

Height = 175 cm

Height of new cylinder = 63 cm

Let the radius of New cylinder r.

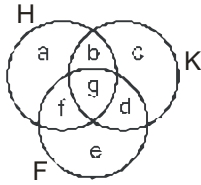
So, volume of both cylinder should be equal  $\pi(12)^2 \cdot 175 = \pi r^2 (63)$

on solving  $r = 20$  cm.

Option (3).

28. Option (3)

29 and 30



Number of students who do not play any game is h.

$$a + b + c + d + e + f + g + h = 150.$$

$$b + g = 20$$

$$e = 20$$

$$f = 35$$

$$d = 25$$

$$a = h$$

$$a = \frac{e}{2} = 10.$$

$$h = a = 10.$$

$$10 + 20 + c + 25 + 20 + 10 + 35 = 150.$$

$$\text{So, } c = 30.$$

29. Number of students who play only kabadi is 30.

Option (3).

30. Number of students play only hockey is 10.

Option (1).

31. Number in the blank box

$$= 7^2 + 9^2 + 8^2$$

$$= 49 + 81 + 64$$

$$= 194.$$

32. Number of circles 15.

33.  $M = 5x$

$$W = 3x$$

Let y part is removed and replaced by water.

$$\therefore M = 5x - \frac{5}{8}y$$

$$W = 3x - \frac{3}{8}y + y$$

$$M = W$$

$$5x - \frac{5}{8}y = 3x - \frac{3}{8}y + y$$

$$x = \frac{5}{8}y \Rightarrow y = \frac{8}{5}x$$

$$\text{Required answer} = \frac{\frac{8}{5}x}{8x} = \frac{1}{5}$$

35.

	x	10	b
6	7	8	9
2	3	4	5
8	1	x	

2,6,7,8,9
2,6,7,8,10
2,3,7,8,9
2,3,7,8,10
2,3,4,8,9
2,3,4,8,10
2,3,4,5,9
1,3,7,8,9
1,3,7,8,10
1,3,4,8,9
1,3,4,8,10
1,3,4,5,9

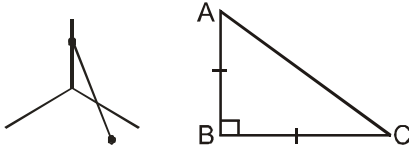
36.  $C_4 = (C_2 - C_3) \sqrt{C_1}$

$$= (10 - 7) \sqrt{49}$$

$$= 3 \times 7$$

$$= 21.$$

37.



ar  $\Delta ABC$  is max.

when  $AB = BC$

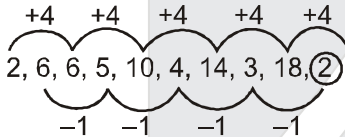
$$AB^2 + BC^2 = AC^2$$

$$2AB^2 = 72$$

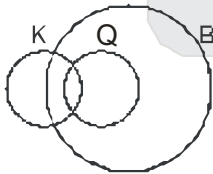
$$AB = 6 = BC$$

$$\text{ar } \Delta ABC = \frac{1}{2} \times AB \times BC = \frac{1}{2} \times 6 \times 6 = 18 \text{ cm}^2.$$

38.



39.



We can't say (I) All king are beautiful nor II. All Queen are King.

So neither I nor II follows.

40.

M	A	T
13	1	20



so 13<sup>th</sup> prime is 41.

1<sup>st</sup> prime is 2.

20<sup>th</sup> prime is 71.

41. The digit in square is half of the sum of the number written in circle on either side of square.

$$\therefore x = \frac{1}{2} (8 + 3) = 6.$$

42. III = (I)<sup>II</sup>

$$H = 2^3 = 8$$

$$\therefore (1)^4 = 1 + A.$$

43. 1 M P H A L    9    13    16    8    1    12

⇒    ↓+1    ↓-1    ↓+2    ↓-2    ↓+3    ↓-3

J L R F D I    10    12    18    6    4    9

MYSURU    13    25    19    21    18    21

⇒    ↓+1    ↓-1    ↓+2    ↓-2    ↓+3    ↓-3

14    24    21    19    21    18

N    X    V    S    U    R

44. The time gap between adjacent clock is 20, 40, (60), 80, 100

So the time in (IV) clock.

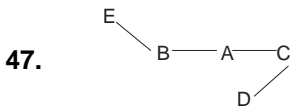
is 12 : 20 + 60 min. = 1 : 20.

45. No of cross increased by 2

4, 6, 8, 10, 12

So in the square there should be 4 cross.

46. a, b, d, h, p  
1 2 4 8 16

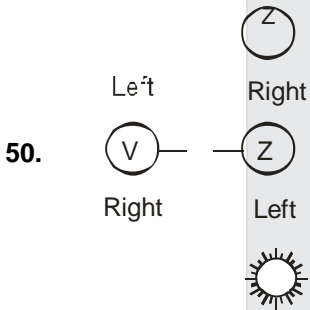


By seen from west to east. E is a head of B and B is a head of A and A is ahead of C and D is ahead of C. By this conclusion any of the IV option are possible .

48. 4 option is correct because if A is at the first place then.

A \_ \_ \_

Then C & D are always together. Which contradict the given condition that C & D can not be on adjacent seat.





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