

## Solutions

1. Ans. C

Total number of girls enrolled in Painting in Institutes A and C together =  $250 + 150 = 400$

Total number of girls enrolled in Stitching in Institutes D and E together =  $250 + 325 = 575$

∴ Required ratio =  $400 : 575 = 16 : 23$

2. Ans. B

Total number of girls enrolled in Stitching in all the institutes together

$$= 325 + 250 + 50 + 250 + 325 = 1200$$

Number of girls enrolled in Stitching in Institute B = 250

∴ Required percentage

$$= \frac{250}{1200} \times 100 = 20.8 \approx 21\%$$

3. Ans. A

Number of girls from all institutes enrolled in Painting =  $250 + 225 + 150 + 175 + 300 = 1100$

Number of girls from all institutes enrolled in Stitching = 1200

Number of girls from all institutes enrolled in Dancing =  $150 + 200 + 75 + 400 + 350 = 1175$

∴ Required ratio =  $1100 : 1200 : 1175 = 44 : 48 : 47$

4. Ans. E

Total number of girls in Institute

A =  $250 + 325 + 150 = 725$

Number of girls enrolled in Dancing in Institute

A = 150

Hence, required percentage

$$= \frac{150}{725} \times 100 = 20.69\%$$

5. Ans. E

Total number of girls in Painting = 1100

6. Ans. A

Toshiba sales in 2014 = 18% of 12500 = 2250

In 2015 sales increased by 12.5% = 14062.5

Toshiba sales = 12% of 14062.5 = 1687.5

% change in sales =  $(2250 - 1687.5) / 2250 \times 100 = 25\%$

7. Ans. A

Total HP sales in 2014 =  $(12500 \times 12) / 100 = 1500$

Total HP sales in 2015 =  $(14062.5 \times 13) / 100 = 1828$

Total HP sales in both 2014 and 2015 =  $(1500 + 1828) = 3328$

8. Ans. D

Total Dell sales in 2014 =  $(12500 \times 24) / 100 = 3000$

Total sales in 2015 =  $(12500 + 12500 \times 12.5 / 100) = 14062.5$

Total Lenovo sales in 2015 =  $(14062.5 \times 32) / 100 = 4500$

Required ratio =  $3000 / 4500 = 2 : 3$

9. Ans. A

Lenovo has maximum increase in sales from 10% to 32%.

10. Ans. D

Total HP's sales in 2014 =  $(12500 \times 12) / 100 = 1500$

Total Acer's sales in 2015 =  $(14062.5 \times 28) / 100 = 3937.5$

Required percentage =  $(1500 \times 100) / 3937.5 = 38\%$

11. Ans. D

Total Boys in College A = 310

Total Girls in College B = 222

Difference =  $310 - 222 = 88$

12. Ans. E

Average number of Boys =

$$[(110 \times 60\%) + (100 \times 51\%) + (96 \times 50\%) + (100 \times 57\%) + (116 \times 50\%)] / 5 = 280 / 5 = 56$$

13. Ans. C

Required Percent =  $(28 / 256) \times 100 = 10.93\% = 11\%$  (approximately)

14. Ans. C

Required Ratio =  $52 : 39 = 4 : 3$

15. Ans. C

Required Ratio =  $52 : 39 = 4 : 3$

16. Ans. A

The pattern is

$$9 \times 11 = 99, 11 \times 11 = 121, 13 \times 11 = 143, 15 \times 11 = 165, 17 \times 11 = 187$$

17. Ans. D

The pattern is

$$5 \times 7 = 35, 9 \times 11 = 99, 13 \times 15 = 195, 17 \times 19 = 323, 21 \times 23 = 483$$

18. Ans. A

The pattern is

$$3^2 - 3 = 6, 5^2 - 5 = 20, 7^2 - 7 = 42, 9^2 - 9 = 72, 11^2 - 11 = 110$$

19. Ans. C

The pattern is

$$1 \times 2 = 2$$

$$1 \times 2 \times 3 = 6$$

$$1 \times 2 \times 3 \times 4 = 24$$

$$1 \times 2 \times 4 \times 5 = 120$$

$$1 \times 2 \times 3 \times 4 \times 5 \times 6 = 720$$

20. Ans. D

$$3 \times 5 \times 7 = 105$$

$$9 \times 11 \times 13 = 1287$$

$$15 \times 17 \times 19 = 4845$$

$$21 \times 23 \times 25 = 12075$$

$$27 \times 29 \times 31 = 24273$$

21. Ans. E

No relation can be established between p & q.

$$I. 9p^2 - (9+12)p + 12 = 0$$

$$9p^2 - 9p - 12p + 12 = 0$$

$$9p(p-1) - 12(p-1) = 0$$

$$(9p-12)(p-1) = 0$$

$$\therefore p = \frac{4}{3}, 1$$

$$II. 18q^2 - 50q + 32 = 0$$

$$9q^2 - 25q + 16 = 0$$

$$9q^2 - 9q - 16q + 16 = 0$$

$$9q(q-1) - 16(q-1) = 0$$

$$(q-1)(9q-16) = 0$$

$$\therefore q = \frac{16}{9}, 1$$

We cannot determine the exact relation.  
since in case :  $p = \frac{4}{3}$  and  $q = 1$  then  $p > q$   
but if :  $p = 1$  and  $q = \frac{16}{9}$  ., then  $q > p$

22. Ans. B

$$p < q$$

$$I. 3p^2 - (18-10)p - 60 = 0$$

$$3p^2 - 18p + 10p - 60 = 0$$

$$3p(p-6) + 10(p-6) = 0$$

$$(p-6)(3p+10) = 0$$

$$\therefore p = 6, -\frac{10}{3}$$

$$II. 20q^2 - 288q + 1036 = 0$$

$$5q^2 - 72q + 259 = 0$$

$$5q^2 - 35q - 37q + 259 = 0$$

$$5q(q-7) - 37(q-7) = 0$$

$$(q-7)(5q-37) = 0$$

$$\therefore q = 7, \frac{37}{5}$$

23. Ans. E

Relationship can't be established

$$I. p^2 - 13p + 36 = 0$$

$$p^2 - 9p - 4p + 36 = 0$$

$$p(p-9) - 4(p-9) = 0$$

$$(p-4)(p-9) = 0$$

$$\therefore p = 4, 9$$

$$II. 3q^2 - 90q + 483 = 0$$

$$q^2 - 30q + 161 = 0$$

$$q^2 - 23q - 7q + 161 = 0$$

$$q(q-23) - 7(q-23) = 0$$

$$(q-23)(q-7) = 0$$

$$q = 23, 7$$

24. Ans. E

Relationship can't be established

$$I. 11p^2 - 44p + 6p - 24 = 0$$

$$11p(p-4) + 6(p-4) = 0$$

$$(p-4)(11p+6) = 0$$

$$\therefore p = 4, -\frac{6}{11}$$

$$II. 90q^2 - 15q - 75 = 0$$

$$6q^2 - q - 5 = 0$$

$$6q^2 - 6q + 5q - 5 = 0$$

$$6q(q-1) + 5(q-1) = 0$$

$$(q-1)(6q+5) = 0$$

$$\therefore q = 1, -5/6$$

25. Ans. A

$$p > q$$

From both, we get

$$P = \frac{22}{69} \text{ and } Q = -\frac{40}{23}$$

26. Ans. A

$$13\frac{3}{4} \times 42\frac{5}{6} + ? = 53\frac{3}{4}$$

$$\Rightarrow \frac{55}{4} \times \frac{257}{6} + ? = \frac{215}{4}$$

$$\Rightarrow -(\frac{14135}{24} - \frac{215}{4}) = ?$$

$$\Rightarrow ? = -\frac{12845}{24} = -535\frac{5}{24}$$

27. Ans. B

$$\begin{aligned} ? &= 2\frac{3}{5} \div 4\frac{7}{8} \times 5\frac{5}{6} \\ &= \frac{13}{5} \times \frac{8}{39} \times \frac{35}{6} \\ &= \frac{28}{9} \\ &= 3\frac{1}{9} \end{aligned}$$

28. Ans. E

x% of 550 - 12% of 150 = 125

$$\begin{aligned} \frac{550 \times x}{100} - \frac{150 \times 12}{100} &= 125 \\ \frac{550 \times x}{100} - 18 &= 125 \\ \frac{550 \times x}{100} &= 125 + 18 = 143 \\ x &= \frac{143 \times 100}{550} = 26 \end{aligned}$$

29. Ans. C

4% of 250 x ? % of 140 = 84

$$\begin{aligned} \frac{4}{100} \times 250 \times \frac{?}{100} \times 140 &= 84 \\ \frac{1000}{100} \times \frac{?}{100} \times 140 &= 84 \\ ? &= \frac{84}{14} \\ \therefore ? &= 6 \end{aligned}$$

30. Ans. E

$$\begin{aligned} \therefore (0.3)^7 &= (0.027)^2 \times (0.09)^2 \div (0.03)^6 \\ (0.3)^7 &= (0.3)^6 \times (0.3)^4 \div (0.3)^6 \\ (0.3)^7 &= (0.3)^{6+4-6} \\ \therefore ? &= 6+4-6 \\ ? &= 4 \end{aligned}$$

31. Ans. C

Case - I :

$$SI = \frac{P \times R \times T}{100} = \text{Rs} \left( \frac{24200 \times 4 \times 6}{110} \right) = \text{Rs } 5808$$

Amount = Principal + SI = Rs (24200 + 5808)  
= Rs 30008

Case - II :

$$SI = \text{Rs} \left( \frac{30008 \times 4 \times 4}{100} \right) = \text{Rs } 4801.28$$

32. Ans. B

Let CP = x

Acc. to question,

$$\begin{aligned} \Rightarrow \frac{x \times 125}{100} - \frac{x \times 120}{100} &= 45 \\ \Rightarrow x &= 900 \\ \text{Required CP} &= \text{Rs. } 900 \end{aligned}$$

33. Ans. A

2 (A + B + C)'s 1-day work =  $\frac{1}{30} + \frac{1}{24} + \frac{1}{20} = \frac{1}{8}$

A + B + C's 1 day work =  $\frac{1}{16}$

Work done by A, B and C in 10 days =  $\frac{10}{16} = \frac{5}{8}$

Remaining work =  $1 - \frac{5}{8} = \frac{3}{8}$

A's one day work =  $\frac{1}{16} - \frac{1}{24} = \frac{1}{48}$

$\frac{1}{48}$  work is done by A in 1 day

So  $\frac{3}{8}$  work will be done in  $48 \times (\frac{3}{8}) = 18$  days

34. Ans. D

Let the present ages of Ram, Rohan and Vinay be 3x, 4x and 5x years respectively.

Now,  $(3x + 4x + 5x)/3 = 28 \rightarrow 12x = 84 \rightarrow x = 84/12 = 7$

So, required Sum =  $(3x + 4x + (5 + 5))$  years

=  $(7x + 10)$  years

=  $(7 \times 7 + 10)$  years

= 59 years

35. Ans. A

$$\text{Average speed} = \frac{\text{total distance}}{\text{total time}}$$

Let the distance = x km

$$\text{Average speed} = \frac{2x}{\frac{x}{(7+3)} + \frac{x}{(7-3)}} = \frac{40}{7}$$

36. Ans. A

$$\text{Water in the mixture} = 80 \times \frac{1}{4} = 20 \text{ litres}$$

Milk in the mixture =  $80 - 20 = 60$  litres

Now, 17 litres of water is added to the mixture Then, required percentage of water in the final mixture

$$= \frac{20+17}{80+17} \times 100 = \frac{3700}{97} = 38\frac{14}{97} \approx 38\frac{1}{7}\%$$

37. Ans. C

In opposite direction speed value is added that will be  
 $20 + 5 = 25 \text{ km/hr}$

When it changes to m/sec then  $\frac{25 \times 5}{18} = \frac{125}{18} \text{ m/sec}$

Time taken by train  $\frac{150 \times 18}{125} = \frac{108}{5} = 21.6 \text{ sec}$

38. Ans. A

Required Probability  $= 1 - \frac{12C_3}{15C_3} = 1 - \frac{44}{91} = \frac{47}{91}$

39. Ans. A

Capital of A is employed in business for 10 months = Rs 16000

Capital of B is employed for 8 months =  $\frac{5}{8} \times 16000 = \text{Rs } 10000$

Capital of C is employed for 6 months = Rs 8000

Thus the ratio of distribution of profit = A : B : C  
 $= 16000 \times 10 : 10000 \times 8 : 8000 \times 6 = 160:80:48$   
 $= 10:5:3$

Therefore the share of B =  $\frac{5}{18} \times 6336 = \text{Rs } 1760$

Hence Option A is correct

40. Ans. D

Suppose, Income of B = ₹ x

Income of A =  $\frac{150}{100} \times x = ₹ \frac{3x}{2}$

Income of C =  $\frac{120}{100} \times \frac{3x}{2}$

$= \frac{6}{5} \times \frac{3x}{2} = ₹ \frac{9x}{5}$

$\therefore x + \frac{3x}{2} + \frac{9x}{5} = 86000$

$\frac{10x + 15x + 18x}{10} = 86000$

$43x = 860000$

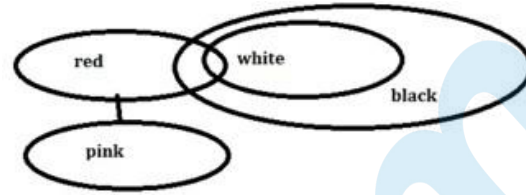
$x = 20000$

So, income of C =  $\frac{9}{5} \times 20000 = ₹ 36000$

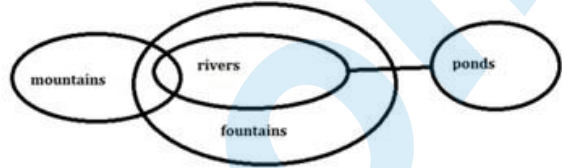
41. Ans. C



42. Ans. E

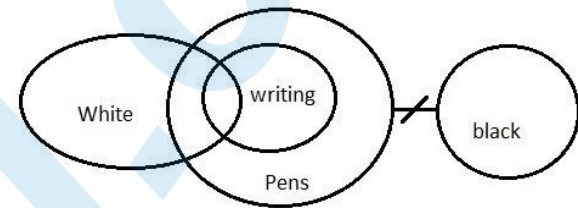


43. Ans. E



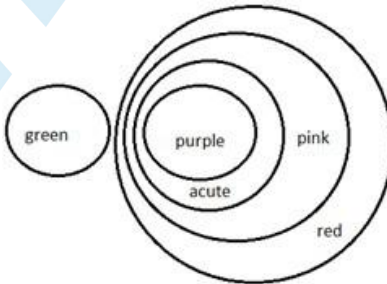
Some fountains that are rivers are definitely not ponds.  
 So, conclusion I follows. And All ponds being fountains is a possibility also follows.

44. Ans. C



only I and II follows

45. Ans. E



Conclusion II & IV follow.

46. Ans. E

$G < A = B \leq C < D$

I.  $G < D$  (True)

$B < E = H$

II.  $H > B$  (True)

47. Ans. D

$A = B \leq C < D \leq E \geq F$

Relation can't be established between A & F.

I.  $A > F$  (false)

$C < D \leq E = H$

II.  $C = H$  (False)

48. Ans. C

$A \leq B = C \leq E$

$A \leq E$

I.  $E > A$

II.  $E = A$

49. Ans. B

$B < C < D = E > F$

Relation can't be established between B&F.

I.  $B > F$  (false)

$C < D = E \leq I$

II.  $C < I$  (True)

50. Ans. A

$H = E > F \geq G$

I.  $H > G$  (True)

$A > B \leq C < D = E$

Relation can't be established between H&G.

II.  $A < E$  (false)

51. Ans. D

U belongs to the Kota

Floor	Person	City
9	Q	Mumbai
8	W	Jaipur
7	U	Kota
6	P	Ranchi
5	V	Kolkata
4	S	Raipur
3	X	Indore
2	T	Pune
1	R	Delhi

52. Ans. E

None of them stays on the topmost floor

Floor	Person	City
9	Q	Mumbai
8	W	Jaipur
7	U	Kota
6	P	Ranchi
5	V	Kolkata
4	S	Raipur
3	X	Indore
2	T	Pune
1	R	Delhi

53. Ans. C

P belongs to the Ranchi

Floor	Person	City
9	Q	Mumbai
8	W	Jaipur
7	U	Kota
6	P	Ranchi
5	V	Kolkata
4	S	Raipur
3	X	Indore
2	T	Pune
1	R	Delhi

54. Ans. A

Only one floors are there between the floor on which X stays and the floor on which R stays

Floor	Person	City
9	Q	Mumbai
8	W	Jaipur
7	U	Kota
6	P	Ranchi
5	V	Kolkata
4	S	Raipur
3	X	Indore
2	T	Pune
1	R	Delhi

55. Ans. D

S belongs to the Raipur

Floor	Person	City
9	Q	Mumbai
8	W	Jaipur
7	U	Kota
6	P	Ranchi
5	V	Kolkata
4	S	Raipur
3	X	Indore
2	T	Pune
1	R	Delhi

56. Ans. B

A	D	B	C	E	G	F
3	6	5	1	4	2	7

57. Ans. A

A	D	B	C	E	G	F
3	6	5	1	4	2	7

58. Ans. D

A	D	B	C	E	G	F
3	6	5	1	4	2	7

59. Ans. E

A	D	B	C	E	G	F
3	6	5	1	4	2	7

60. Ans. C

A	D	B	C	E	G	F
3	6	5	1	4	2	7

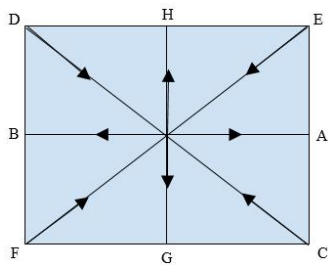
61. Ans. E

Person	Gender
A	Female
B	Female
C	Male
D	Female
E	Male
F	Female
G	Male
H	Male

C is the husband of D

H is the husband of A

E is the husband of B

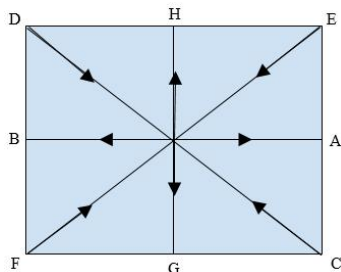


A sits in the centre of one of the sides of the square table.

62. Ans. C

Person	Gender
A	Female
B	Female
C	Male
D	Female
E	Male
F	Female
G	Male
H	Male

C is the husband of D  
H is the husband of A  
E is the husband of B

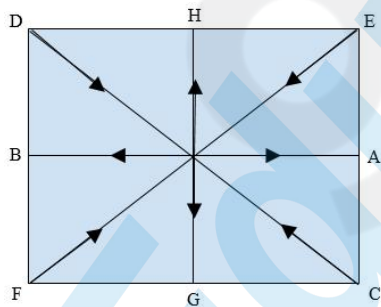


E is the husband of B

63. Ans. C

Person	Gender
A	Female
B	Female
C	Male
D	Female
E	Male
F	Female
G	Male
H	Male

C is the husband of D  
H is the husband of A  
E is the husband of B

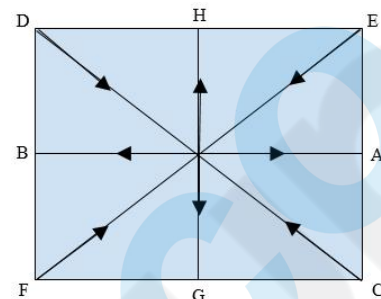


Two people sit between B and C when counted in anti-clockwise direction from B.

64. Ans. A

Person	Gender
A	Female
B	Female
C	Male
D	Female
E	Male
F	Female
G	Male
H	Male

C is the husband of D  
H is the husband of A  
E is the husband of B

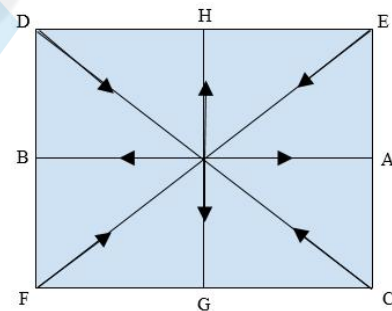


D is the wife of C.

65. Ans. E

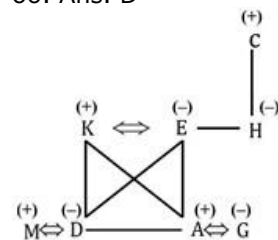
Person	Gender
A	Female
B	Female
C	Male
D	Female
E	Male
F	Female
G	Male
H	Male

C is the husband of D  
H is the husband of A  
E is the husband of B



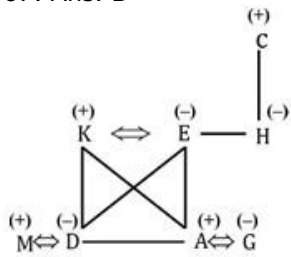
The position of E with respect to C is Second to the right.

66. Ans. D

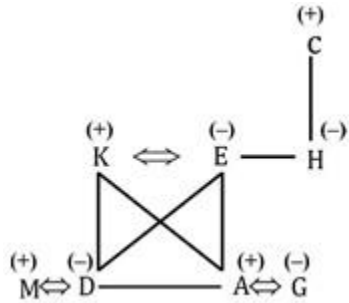




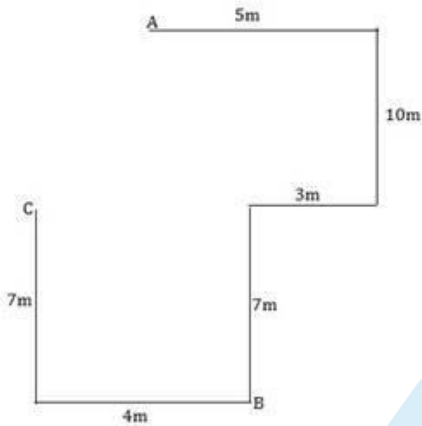
67. Ans. B



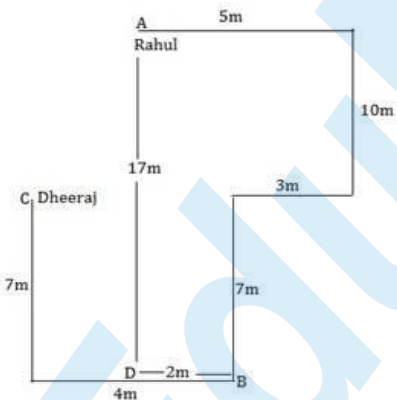
68. Ans. E



69. Ans. B

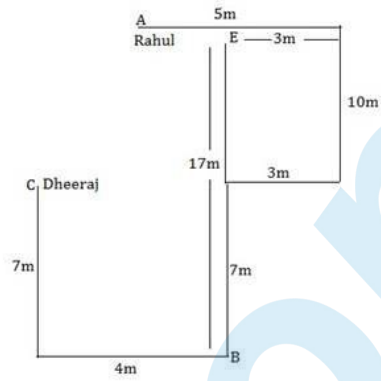


70. Ans. C



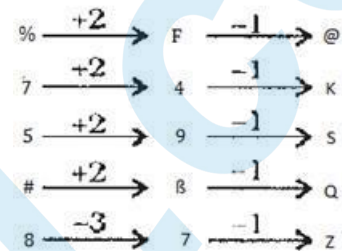
Point C is in south-west of point A.

71. Ans. B



E is 2m east of A.

72. Ans. E



73. Ans. D

Symbol	Letter	Symbol
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Such combinations are :

#Qß	@F©	©V&
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74. Ans. A

Vowel: Number : Number  
There is no such combination.

75. Ans. D

5<sup>th</sup> to the left 16<sup>th</sup> from the left end means 11<sup>th</sup> from the left end i.e. ß

76. Ans. B

L S N \* S E # Q ß U % @ F © V & A Z K W M G

77. Ans. E

SHE ⇒ EHS

AND ⇒ ADN

TWO ⇒ OTW

WIT ⇒ ITW

GUM ⇒ GMU

Therefore, no one word will remain same after arranging in alphabetical order.

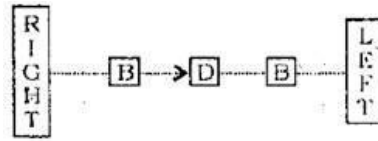
Hence, option E is correct.

78. Ans. E  
Second word - AND  
Fifth word - GUM

A **BCDEF** G

Therefore,  
There are 5 letters between the first letter of the second word and the first letter of the fifth word.  
Hence, option E is correct.

79. Ans. D  
Girls are facing south.



It is not clear B is to the left or right of D.  
Hence Option D is correct

80. Ans. E  
There are four such pairs of word i.e. EG, EI, GI and LN.

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