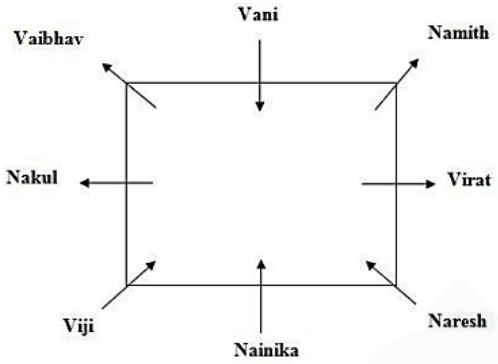
Solutions

1. Ans. A.
- Only one person sits between Namith and Vaibhav and both are facing same directions.
- Namith sits fourth to the right of Viji, who doesn't sit in middle of the table.
- Vaibhav sits fourth to right of Naresh.
- Vani is sitting immediate right of Vaibhav.
- Nakul is to the immediate left of Vaibhav.
- Virat faces opposite direction of Vani and sits second to the left of Vani.
- Vani sits adjacent to Namith, who faces opposite direction of Vani.
- Viji is not a neighbour of Naresh and faces towards the centre.
- Nakul is sitting second to left of Nainika, who faces same direction as Viji.



2. Ans. B.
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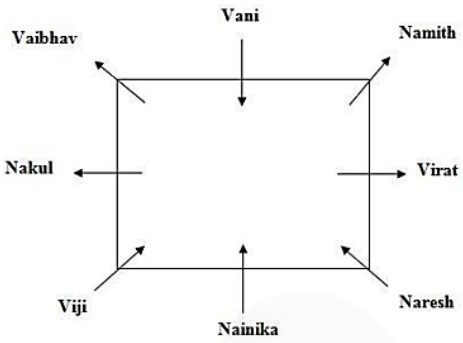

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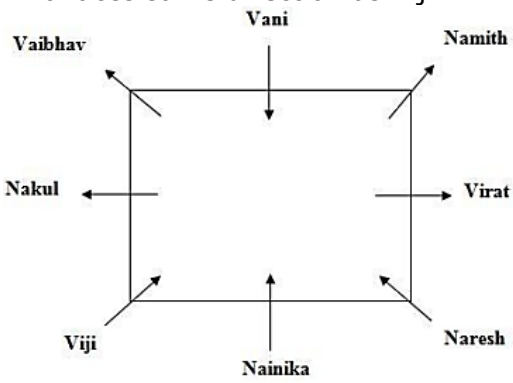

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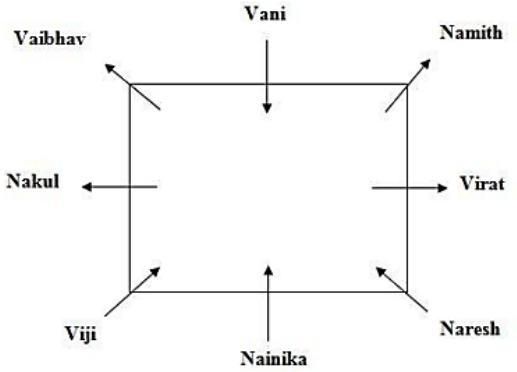

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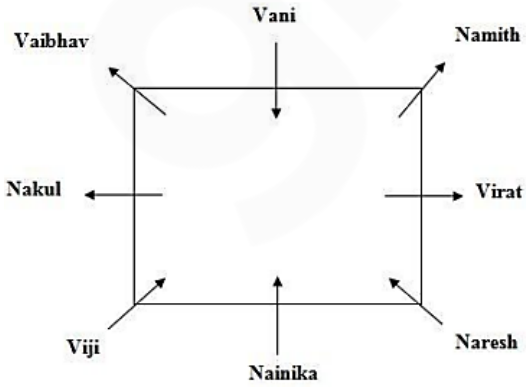


6. Ans. E.
Statement:T < P ≤ U; L>U ≤ K; P ≥ R
Conclusions:
K ≥ U ≥ P ≥ R
I. K ≥ R **=> True**
L > U ≥ P ≥ R
II. L > R **=> True**
Both Follows

7. Ans. C.
Statement:H = I ≤ R; M ≥ R<S
Conclusions:I. M=I II. M > I
On combining Statement we get: H = I ≤ R≤ M <S
From the statement we can say I≤M true and I

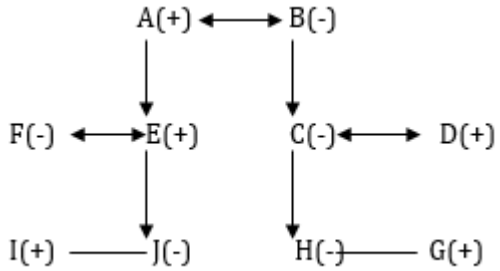
8. Ans. B.
Statement:D > H ≥ N; S > I ≤ H
Conclusions:I. N ≤ S II. N < D
On combining Statement we get: S > D > H ≥ N≥ I or D > S > H ≥ I ≥ N….1)
For conclusion I: So from 1) N ≤ S does not hold true
For conclusion II: So from 2) N < D hold true. So II conclusion true

9. Ans. B.
Statement:P ≤ O < I; P > Y > W
Conclusions:I. Y ≤ I II. O > W
On combining Statement we get: W
For conclusion I: So from 1) Y≤ I does not hold true
For conclusion II: So from 2) W< O hold true. So II conclusion true

10. Ans. A.
Statement:A ≥ B > C ≥ F; Z < C ≤ D < E
Conclusions:I. A > Z II. F > E
On combining Statement we get: A ≥ B>E >D ≥ C≥F > Z …..1)
For conclusion I: So from 1) A > Z hold true
For conclusion II: So from 2) F > E does not hold true. So I conclusion true

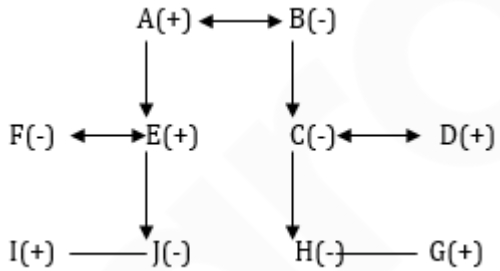
11. Ans. C.
Since each couple has a son and a daughter and there are three couples in a three generation family A must be first generation and must be married to B. D, E must be 2nd generation. C is B's daughter and H is E's niece. Also, J is B's granddaughter. It means J is E's daughter. As D is J's uncle which means D and E are not married. I and G must be males of 3rd generation. If F is I's mother then F must be married to either D or E. If F is married to

D then G must be the son of F which is not possible. Therefore F is married to E and D is married to N. D and C have children as H and J. E and F have children as H and I.
Family Tree:



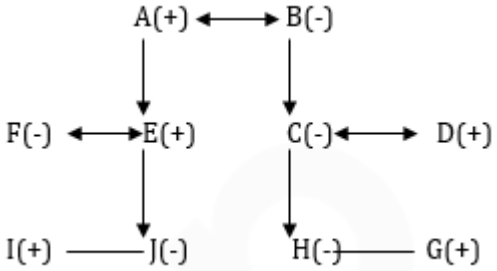
F is mother of J.

12. Ans. B.
Since each couple has a son and a daughter and there are three couples in a three generation family A must be first generation and must be married to B. D, E must be 2nd generation. C is B's daughter and H is E's niece. Also, J is B's granddaughter. It means J is E's daughter. As D is J's uncle which means D and E are not married. I and G must be males of 3rd generation. If F is I's mother then F must be married to either D or E. If F is married to D then G must be the son of F which is not possible. Therefore F is married to E and D is married to N. D and C have children as H and J. E and F have children as H and I.
Family Tree:



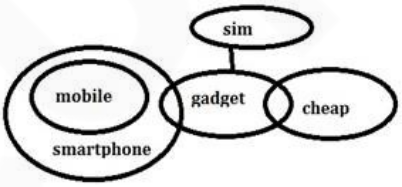
B is grandmother of G.

13. Ans. C.
Since each couple has a son and a daughter and there are three couples in a three generation family A must be first generation and must be married to B. D, E must be 2nd generation. C is B's daughter and H is E's niece. Also, J is B's granddaughter. It means J is E's daughter. As D is J's uncle which means D and E are not married. I and G must be males of 3rd generation. If F is I's mother then F must be married to either D or E. If F is married to D then G must be the son of F which is not possible. Therefore F is married to E and D is married to N. D and C have children as H and J. E and F have children as H and I.
Family Tree:

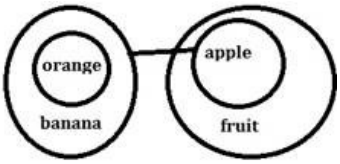


D is son-in-law of A.

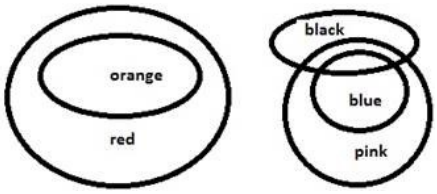
14. Ans. A.



15. Ans. E.

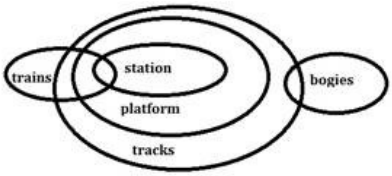


16. Ans. D.

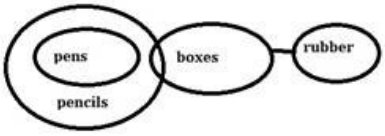


Conclusion 1 does not follow, as some red are already orange. So, some red are orange is a possibility does not follow.
Because some red are Orange it definitely follows, so it's not a possibility.

17. Ans. A.



18. Ans. A.



19. Ans. D.
The code for 'damaging' is - either di or yu.
Below are the codes -
risk - nu
very - gl
also - fu
is - mi
low - se
associated - ta
that - po
large - ro
inherent - di/yu
damaging - yu/di

20. Ans. A.
'risk is very large' may represent by - gi mi nu ro
Below are the codes -
risk - nu
very - gl
also - fu
is - mi
low - se
associated - ta
that - po
large - ro
inherent - di/yu
damaging - yu/di

21. Ans. C.
the code for 'associated' is - ta
Below are the codes -
risk - nu
very - gl
also - fu
is - mi
low - se
associated - ta
that - po
large - ro
inherent - di/yu
damaging - yu/di

22. Ans. E.
the code for 'inherent large risk' is - Cannot be determined
Below are the codes -
risk - nu
very - gl
also - fu
is - mi
low - se
associated - ta
that - po
large - ro
inherent - di/yu
damaging - yu/di

23. Ans. B.
'low risk associated industry' may represent by - ta hi nu se
Below are the codes -
risk - nu
very - gl
also - fu
is - mi
low - se
associated - ta
that - po
large - ro
inherent - di/yu
damaging - yu/di

24. Ans. D.
Thus P lives on the 5th number floor.

8	W
7	Q
6	V
5	P
4	T
3	R
2	U
1	S

Hence Option D is correct.

25. Ans. A.
U lives exactly between the floors of R and S.

8	W
7	Q
6	V
5	P
4	T
3	R
2	U
1	S

Hence Option A is correct

26. Ans. C.
W lives on the topmost floor.

8	W
7	Q
6	V
5	P
4	T
3	R
2	U
1	S

Hence Option C is correct

27. Ans. B.
All the others occur at odd places except V which occurs at even place. Thus V does not belong to the group.

8	W
7	Q
6	V
5	P
4	T
3	R
2	U
1	S

Hence Option B is correct

28. Ans. E.
The solution to the above puzzle is:
4 persons that is V, P, T and R live between Q and U.

8	W
7	Q
6	V
5	P
4	T
3	R
2	U
1	S

Hence Option E is correct

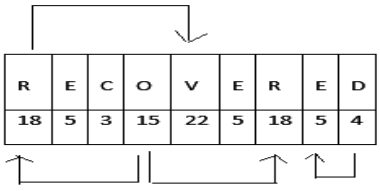
29. Ans. B.
From I,
Is=7, energy/ good= 6/3.
So I alone is not sufficient
From II,
Mistakes/are=1/4, good=6.
So II alone is sufficient to answer the question.

30. Ans. D.
Neither Statement I or II alone are sufficient to answer the question.
Description: Since from statement I we cannot get clearly that the clear picture of seating of C and B.
From statement II also we cannot get identify where A, B, C, D, and E are seating. Thus both I and II statement are insufficient to answer.

31. Ans. B.
From I:
D>X=P and S>R , D>R .. R can be shorter or taller than P or X. So, from statement I we can not decide who is shortest.
From II:
X=P>R, D>X = P, S>X = P thus it is clear that R is shortest.
Hence, data in statement II alone is sufficient to answer the question.

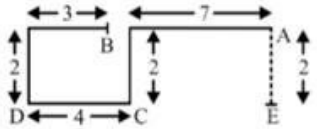
32. Ans. E.
From statement I- The number of students of class are 21, 22, 23, 24, 25 or 26.
From statement II- The number of students in the class are 25 or 30.
From both the statements, there are 25 students in the class.
Hence, option E is correct.

33. Ans. D.
Explanation

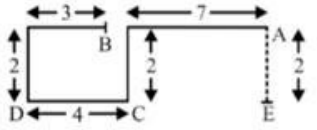


There are four such pairs

34. Ans. B.



35. Ans. D.



36. Ans. A.

Arrangement will be as

South H J F G I

North Y V Z W X

Hence it is clear that Y faces H

37. Ans. D.

Arrangement will be as

South H J F G I Row 2

North Y V Z W X Row 1

As F sits in the Middle of Row 2, its exactly left will be G

Hence option D is correct

38. Ans. C.

Arrangement will be as

South H J F G I

North Y V Z W X

W is in the Middle of the row
While all other four are sitting in the extreme corners
Hence option C is correct

39. Ans. C.

Arrangement will be as

South H J F G I

North Y V Z W X

I faces X and third person to the right of I is J
Hence option C is correct

40. Ans. B.

Arrangement will be as

South H J F G I

North Y V Z W X

An immediate neighbour of V is Z who faces F
Hence option B is correct

41. Ans. C.
I. X=7,8
II. y=+8
Remember that if $y^2 = 64$ then y= +8 and -8
but if Y = $\sqrt{64}$ then y will only be +8

42. Ans. C.
I. X= −3
II. y=6,−3
Hence answer=(c) x ≤ y

43. Ans. E.
I. x=3,−2
II. Y=2, 4
Hence answer=(e)

44. Ans. C.
$x^2 - 11x - 80 = 0$
$x^2 - 16x + 5x - 80 = 0$
$x(x-16) + 5(x-16) = 0$
$(x+5)(x-16) = 0$
x=+16, -5
$y^2 + 9y - 52 = 0$
$y^2 + 13y - 4y - 52 = 0$
$y(y+13) - 4(y+13) = 0$
$(y-4)(y+13) = 0$
y=+4, -13
Therefore, relationship between x and y can't be determined.

45. Ans. A.
$4x^2+12x+9=0$
$4x^2+6x+6x+9=0$
$2x(2x+3)+3(2x+3)=0$
$(2x+3)(2x+3)=0$
2x+3=0 or 2x+3=0
2x=-3 or 2x=-3
$x=-\frac{3}{2}$ or $x=-\frac{3}{2}$
x=-1.5 or y=-1.5
$2y^2+11y+14=0$
$2y^2+7y+4y+14=0$
$y(2y+7)+2(2y+7)=0$
$(2y+7)(y+2)=0$
2y+7=0 or y+2=0
2y=-7 or y=-2
$y=-\frac{7}{2}$ or y=-2
y=-3.5 or y=-2
x>y

46. Ans. B.

$? = 11^2 + 4^3 \times 4$

$? = 377 \approx 376$

47. Ans. C.

423.62 – 269.89 ÷(11.9% of 74.98)=?

423.62 – 269.89 ÷(12% of 75)=?

$\Rightarrow 424 - 269 \div 9 = ?$

$\Rightarrow 424 - 30 = ?$

$\Rightarrow ? = 394 \approx 395$

48. Ans. C.

$23 \times 15 - 60 + ? \div 31 = 292$

$345 - 60 + ? \times \frac{1}{31} = 292$

$285 + ? \times \frac{1}{31} = 292$

$? = 31 \times 7$

$? = 217.$

49. Ans. C.

By taking approximate values

$151 - 119 \div 17 - ?^2 = 80$

$151 - 7 - ?^2 = 80$

$144 - ?^2 = 80$

$?^2 = 64$

$? = 8.$

50. Ans. A.

$? \div 4 + 5 \times 9 = 132$

$\frac{?}{4} = 87$

? = 348.

51. Ans. C.

Sony: 0.5/7.5×100=6.66%

Microsoft: 2/10×100=20%

Nintendo: 7/9×100=77.77%

Mitashi: 3/10×100=30%

ROG: 3/8×100=37.5%

52. Ans. D.

Sony: 0.5/7.5×100=6.66%

Microsoft: 2/10×100=20%

Nintendo: 7/9×100=77.77%

Mitashi: 3/10×100=30%

ROG: 3/8×100=37.5%

53. Ans. C.

Total sale in 2016-2017= 8+12+16+13+11= 60(in thousands)=60,000

Total sale in 2017-2018= 7.5+10+9+10+8=44.5(in thousands)=44,500

Absolute change or Difference =60,000-44,500=15,500

54. Ans. D.

Combined sale of Sony and Nintendo in 2016-2017= 7.5+9=16.5

Combined sale of Sony and Nintendo in 2017-2018= 8+16=24

Percentage increase=7.5/16.5×100=45.45%

55. Ans. C.

Total sale of Microsoft= 12+10=22(in thousands) =22,000

Total sale of ROG= 11+8=19(in thousands) =19,000

Difference=22,000-19,000=3,000

56. Ans. B.

Appeared students from institute D in 2013 = 1765

Qualified students from institute D in 2013 = 1567

% of qualified students over appeared students from institute D in 2013 = $\frac{1567}{1765}$ x 100 = 88.78%

Appeared students from institute D in 2014 = 1574

Qualified students from institute D in 2014 = 1024

% of qualified students over appeared students from institute D in 2014 = $\frac{1024}{1574}$ x 100 = 65.06%

Appeared students from institute D in 2015 = 1754

Qualified students from institute D in 2015 = 1210

% of qualified students over appeared students from institute D in 2015 = $\frac{1210}{1754}$ x 100 = 68.98%

Appeared students from institute D in 2016 = 1364

Qualified students from institute D in 2016 = 1145

% of qualified students over appeared students from institute D in 2016 = $\frac{1145}{1364}$ x 100 = 83.94%

Appeared students from institute D in 2017 = 1510

Qualified students from institute D in 2017 = 1214

% of qualified students over appeared students from institute D in 2017 = $\frac{1214}{1510}$ x 100 = 80.39%

Hence, the lowest percentage of institute D is in 2014.

57. Ans. D.
Qualified students from all the institutes in 2017 = 6840
Appeared students from all the students in 2017 = 7984
Required percentage = $\frac{6840}{7984}$ x 100 = 86%

58. Ans. E.
Appeared students from institute B in 2014 = 1654
Qualified students from institute B in 2014 = 1566
Not qualified students from institute B in 2014 = 1654 – 1566 = 88
Appeared students from institute B in 2016 = 1440
Qualified students from institute B in 2016 = 1165
Not qualified students from institute B in 2016 = 1440 – 1165 = 275
Required difference = 275 – 88 = 187

59. Ans. C.
Required value = $\frac{1530+1886+1806+1478+1645}{5}$ = 1669

60. Ans. A.
Required percentage = $\frac{7072}{8460}$ x 100 = 83.59%

61. Ans. E.
Average weight of 17 students = 90 kg
Let, the weight of teacher be x
So, the average weight is increased by 200 grams
Therefore, $\frac{(17\times90)+x}{18} = 90 + \frac{200}{1000}$

$$\frac{1530+x}{18} = 90.2$$

$$1530 + x = 1623.6$$

$$x = 1623.6 - 1530 = 93.6\text{kgs}$$

Therefore, the weight of the teacher = 93.6 kgs
So option (e) is the correct answer.

62. Ans. A.
Speed downstream = 8 + 2 = 10 kmph
Speed upstream = 8 – 2 = 6 kmph
Let the required distance be d km.
Then, $\frac{d}{10} + \frac{d}{6} = 2$; 6d + 10d = 120
16d = 120 ; d = 7.5 km

63. Ans. C.
Let the sum be Rs. P.
S.I. = Rs. (900 – P)

$$\text{So, } \frac{P\times10\times5}{100} = 900 - P$$

50 P = 90000 – 100P
150 P = 90000
P = Rs. 600
Now, P = 600, R = 15% , T = $\frac{5}{2}$ years
S.I. = $\frac{600\times15\times5}{100\times2}$ = Rs. 225
Hence, amount = 600 + 225 = Rs. 825

64. Ans. E.
Profit ratio of A,B and C,
A : B : C = (10,000 x 12) : (7500 x 12) : (10,000 x 9) = 4 : 3 : 3
Hence, B's share = (3/10) x 12000 = Rs. 3600

65. Ans. B.
Let Rubina's monthly salary = x
According to question,
75% of 16% of x = 6567
x = $\frac{6567\times100\times100}{75\times16}$
x = $\frac{65670000}{1200}$ = Rs.54725

66. Ans. C.
Let capacity of tank = 60 units
Efficiency of A = $\frac{60}{12}$ = 5 units/hour
Efficiency of B = $\frac{60}{15}$ = 4 units/hour
Efficiency of C = $\frac{60}{6}$ = - 10 units/hour
Efficiency of A and B together = 5 + 4 = 9 units/hour
Tank filled in 5 hours = 9 x 5 = 45 units
Efficiency of A, B and C together = 5 + 4 – 10 = - 1 unit/hour
Hence, time taken to empty the tank= $\frac{45}{1}$ = 45 hours

67. Ans. C.
Let the present age of the man and his son be x and y respectively
So,
x – 5= 4(y-5) +3
x – 4y= -12 (i)
Again
X+3 = 3(y+3) -6
x – 3y= 0 (ii)
By solving, we get
X= 36, y=12
Sum of their ages = 48
Hence after 16 years the sum of their ages will be 80 years.

68. Ans. E.
Let the incomes of Ram and Sham be 5x and 4x respectively.
Now,
(5x-1200)/(4x-1200) = 3/2
x = 600
Income of Ram = 5x = 3000

69. Ans. A.
Let total work = 36 units (LCM of 12 and 18)
Efficiency of A = $\frac{36}{12}$ = 3 units/day
Efficiency of B = $\frac{36}{18}$ = 2 units/day
1 day work of A and B together = 3 + 2 = 5 units/day
Last 2 days' work of B = 2 x 2 = 4 units
Hence, rest work compelted together = 36 – 4 = 32 units.
Hence, days the rest work is completed by A and B = $\frac{32}{5}$ days
So, total days = 2 + $\frac{32}{5}$ = $\frac{42}{5}$ days

70. Ans. E.
Relative speed = 50 + 40 = 90 km/h = $90\times\frac{5}{18}$ = 25 m/sec
Distance covered = 750 + 750 = 1500 meters
Required time = $\frac{1500}{25}$ = 60 seconds

71. Ans. A.
8 × 1 + 1 = 9
9 × 1.5 + 1.5= 15
15 × 2 + 2 = 32
32 × 2.5 + 2.5 = 82.5
82.5 × 3 + 3 = 250.5

72. Ans. A.
2 + 1 ³ + 2 = 5
5 + 2 ³ – 4 = 9
9 + 3 ³ + 6 = 42
42 + 4 ³ – 8 = 98
98 + 5 ³ + 10 = 233

73. Ans. B.
100×1 = 100
100×0.5 = 50
50×0.25 = 12.5
12.5×0.125 = 1.5625

74. Ans. A.
12×1.5+2 = 20
20×1.5+4 = 34
34 × 1.5 + 6 = 57
57× 1.5 + 8 = 93.5

75. Ans. D.
1023 – 36 = 987
987 – 72 = 915
915 – 108 = 807
807 – 144 = 663

76. Ans. D.
Both the statements individually do not answer the question.
Combining statement 1 & 2:
The train takes 2 seconds to cross 50m distance.
Therefore, speed of the train = 50/2 = 25m/s
And, length of the train = 25 * 5 = 125 m.
Hence, option is 4.

77. Ans. A.
3/4th work in 6 hours. Total work can be completed in 8 hours.
From statement 1:
1/a + 1/b = 1/8
⇒ 1/b = 1/10
Therefore, A finishes the work in 40 hours.
Statement 2 alone is not sufficient.
Hence, option is 1.

78. Ans. D.
From I, Pravin = Aman + 1200
From II and III, $\frac{Aman}{Vimal} = \frac{5}{3}$
$\frac{Aman}{Aman-1000} = \frac{5}{3}$
∴ All statements are necessary to get the monthly salary of Pravin.

79. Ans. D.
From statement I:
SP =Selling Price
MP = Marked Price
CP = Cost price
SP = 90% MP
SP = 9MP/10
From statement II:
When no discount is given,
SP = MP
Profit = SP – CP
35 = (SP – CP) *100/CP
35CP = 100SP – 100CP
135CP = 100SP
CP = 100SP/135
CP = 100MP/135
From both I and II:
Profit% = (9MP/10 – 100MP/135)*100 / (100MP/135) %
= (9/10 – 100/135) * 135 %
Hence, both the statements are required to answer this question

80. Ans. D.
From I. There are 11 students in the class.
From II. The average age of students and class teacher is 14 years.
From III. The average age of class teacher is 3 years more than that of students.
Now, combining all there statements, we have
Average age of (students + teacher) = 14 × 12 = 168 years
Average age of 11 students = 14 – 3 = 11 years
Total age of 11 students = 11 × 11 = 121 years
Teacher's age = 168 – 121 = 47 years.
This requires all statements to complete the calculations.

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