SBI Clerk Prelims 2020
Superb 30 PDF Series

Direction: In the following question, two equations are given. Solve the equations and answer accordingly:
1. $4x^2-13x+9=0$
$3y^2-16y+21=0$
A. x>y
B. x<y
C. x≥y
D. x≤y
E. x=y or the relationship can't be established (CND)

Direction: In the following question, two equations (I) and (II) given. You have to solve both & mark your answer:
2. I. $x^2 - 19x - 252 = 0$
II. $y^2 + 35y + 264 = 0$
A. x > y
B. x < y
C. x ≥ y
D. x ≤ y
E. x = y or relationship cannot be established

Directions: In the following question two equations numbered I and II are given. You have to solve both the equations and answer the question.
3. I. $3x^2 + 14x + 15 = 0$
II. $3y^2 +23y + 42 = 0$
A. x > y
B. x ≥ y
C. x < y
D. x ≤ y
E. If x = y or the relationship cannot be established.

Direction: In the following question, two equations are given. Solve the equations and answer accordingly:
4. $X^2 - 23X + 130 = 0$
$Y^2 - 28Y + 195 = 0$
A. X > Y
B. X ≥ Y
C. Y > X
D. Y ≥ X
E. X = Y OR the relationship doesn't exist

Direction: In the following question, two equations numbered I and II are given. You have to solve both the equations and establish the relationship between the given variables:
5. I. $3x^2-10x+8=0$
II. $12y^2-17y+6=0$
A. x = y or the relationship cannot be established
B. x > y
C. x < y
D. x ≥ y
E. x ≤ y

Directions: What will come in the place of question mark (?) in the following question? (You do not have to calculate the exact value).
6. $(13.97)^2-(11.02)^2+(4.01)^2÷(1.97)^2=?$
A. 58
B. 45
C. 65
D. 79
E. 102

Direction: What approximate value will come in place of the question mark (?) in the following question? (You are not expected to calculate the exact value.)
7. $\sqrt[4]{81.02} \times 63.99 + \sqrt{24.99} = ?^2$
A. 27
B. 18
C. 24
D. 14
E. 36

Direction: What approximate value should come in place of the question mark (?) in the following question (Note: You are not expected to calculate the exact value)?
8. **19.003×22.998-280.001=?**
A. 227
B. 117
C. 157
D. 97
E. 207

Direction: What approximate value will come in place of the question mark (?) in the following questions? (You are not expected to calculate the exact value.)
9. $\sqrt{48.99} \times 104.21 ÷ 3 = 3^?$
A. 2
B. 5
C. 4
D. 3
E. 6

Direction: What approximate value should come in place of the question mark (?) in the following equation (Note: You are not expected to calculate the exact value)?
10. 919.999 ÷ 25.002 × 13.996 = ?
A. 495
B. 525
C. 450
D. 515
E. 540

Direction: Find the missing number in the given series.
11. 14, 9, 20, 12 , ?, 15
A. 55
B. 14
C. 30
D. 26

E. 35

Direction: Find the Missing term in the following series:

12. 3.2, 4.8, 2.4, 3.6, ?, 2.7
A. 12.5   B. 1.8
C. 6.8   D. 13.2
E. 1.5

Direction: What should come in place of the question mark '?' in the following number series?

13. 30, 42, 56, 72, 90, ?
A. 110   B. 111
C. 215   D. 152
E. 116

Direction: What should come in place of question mark (?) in the following number series?

14. 2, 4, 10, 32, ?, 652
A. 130   B. 150
C. 170   D. 190
E. None of these

Direction: What will come in place of the question mark (?) in the following number series?

15. 9, 13, 4, 20, ?, 31
A. 5   B. -5
C. 25   D. -21
E. 26

Direction: An organization has 8 departments. The table below gives information about the number of members in each of the departments, the age of the oldest and the youngest member of the departments and the average age of the departments. Some of the data is missing:

Department	No of employees	Age of oldest member	Age of youngest member	Average age of team
Content	7	42	27	32.86
Finance	4	45	34	
HR	3	44	35	39
Operations	6	52	29	
Production		46	35	40
R&D	5	54	28	40.4
Sales	8			33
Technical	6			

16. If there are a total of 44 employees, what is the average age of the employees apart from the youngest and oldest members in the production team?

A. 40 years   B. 39.67 years
C. 39.5 years   D. 39.4 years
E. 39.25 years

17. If the age of the 3rd person in HR is equal to the average age of the remaining 2 persons in finance, what is the average age of the members of finance team?
A. 38.75 years   B. 39 years
C. 39.25 years   D. 40 years
E. None of these

18. The ages of the members of sales team is in arithmetic progression. If no employee in the company is below 20 years, what is the age of the oldest member of the sales team? Age of every member is an integer in years.
A. 47 years   B. 45 years
C. 41 years   D. 40 years
E. 37 years

19. The ratio of the ages of the oldest and the youngest member of the technical team is 5:3. If the average age of the remaining members of the team is 35.5, what could be the possible average age of the technical team? Age of every member is an integer in years.
A. 37.17 years   B. 36.83 years
C. 36.5 years   D. 36 years
E. 35.67 years

20. If the average age of the remaining members of operations team is 3 years more than the average age of the remaining members of R&D team, what is the average age of the operations team?
A. 41.33 years   B. 41.83 years
C. 42.17 years   D. 42.5 years
E. 43 years

Direction (21 – 25) : Answer the questions based on the information given below:
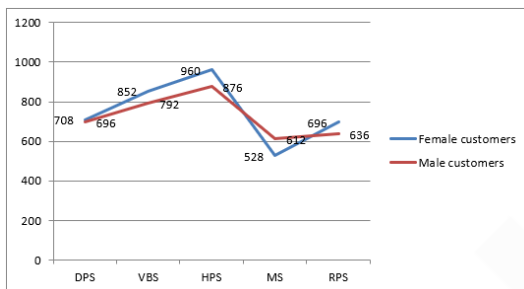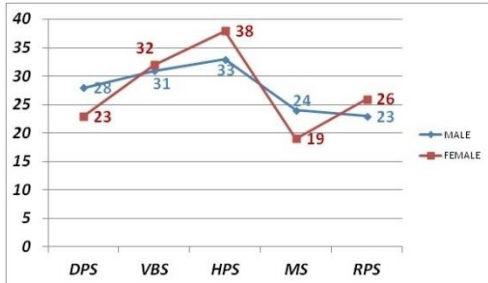The first line graph represents the average number of female customers and male customers per organisation who live in building of five different headquarters. The second line graph represents the total number of female customers and male customers in five different headquarters.

Note 1: There are total 12 organisations in each headquarter.
Note 2: Total number of customers in headquarters = Number of customer who live in building + number of part timers.

21. What is the difference between the number of part timers' male customers and the number of part timers' female customers in VBS?
A. 42   B. 48
C. 45   D. 37
E. 51

22. What is the average number of customers per organisation who are part timers' in RPS?
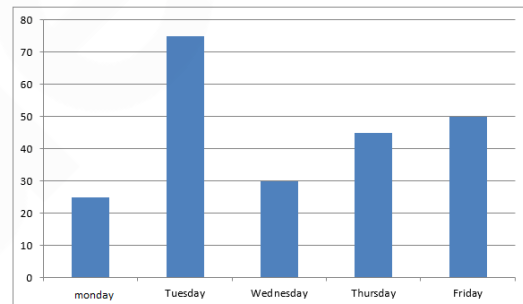A. 58   B. 71
C. 74   D. 62
E. 67

23. What is the ratio of the number of male customers who are part timers in DPS to the number of male customers who are part timers in HPS?
A. 3: 4   B. 2: 3
C. 4: 5   D. 3: 1
E. None of these

24. Find the percentage of the number of female customers who are part timers in MS with respect to the number of male customers who are part timers in the same headquarter.
A. 102.2%   B. 84.3%
C. 89.2%   D. 95.7%
E. 92.6%

25. Find the difference between the total number of female customers who live in building in all the five headquarters together and the total number of male customers who live in building in all the five headquarters together.
A. 16   B. 19
C. 12   D. 7
E. 26

Directions (26 – 30) : Bar graph given below shows pens sold by a retailer on five different days. Study the data carefully and answer the following questions.
Number of pen sold by a retailer on five different days.

26. Out of total pens sold on Tuesday, the ratio between the number of defective pens sold to total number of pens sold is 7 : 15. Find the total number of non - defective pens sold on Tuesday by the retailer.
A. 40   B. 15
C. 60   D. 45
E. 90

27. Total number of pens sold on Saturday is 40% more than total number of pens sold on Wednesday. Find the total number of pens sold on Friday and Saturday together.
A. 92   B. 122
C. 172   D. 125
E. 105

28. Find the difference between the total number of pens sold on Monday and Tuesday together to the total number of pens sold on Thursday and Friday together.
A. 25   B. 40
C. 5   D. 22
E. 10

29. The total number of pens sold on Tuesday is 25% more than the total number of pens sold on Sunday. Find the total number of pens sold on Sunday.

A. 72   B. 60
C. 94   D. 43
E. 75

30. Out of the total pens sold on Thursday, 20% were blue ink pens. Out of the remaining, 25% were red ink pens and the remaining were black ink pens. Find the total number of blue and black ink pens sold on Thursday.
A. 36   B. 46
C. 56   D. 66
E. 55

ANSWERS

1. Ans. B.
$4x^2-13x+9=0$
$4x^2-4x-9x+9=0$
$4x(x-1)-9(x-1)=0$
$(x-1)(4x-9)=0$
x=1 or x=9/4=2.25
$3y^2-16y+21=0$
$3y^2-9y-7y+21=0$
$3y(y-3)-7(y-3)=0$
$(y-3)(3y-7)=0$
y=3 or y=7/3 =2.33
x<y
2. Ans. A.
I. $x^2 - 19x - 252 = 0$
$\Rightarrow x^2 - 28x + 9x - 252 = 0$
$\Rightarrow x(x - 28) + 9(x - 28) = 0$
$\Rightarrow (x - 28)(x + 9) = 0$
So, x = + 28 or x = - 9
II. $y^2 + 35y + 264 = 0$
$\Rightarrow y^2 + 24y + 11y + 264 = 0$
$\Rightarrow y(y + 24) + 11(y + 24) = 0$
$\Rightarrow (y + 24)(y + 11) = 0$
So, y = - 24 or y = - 11
When, x = + 28, x > y for y = - 24 and
x > y for y = - 11
And, when x = - 9, x > y for y = - 24
and x > y for y = - 11
∴ We can see that x > y.
3. Ans. B.
I. $3x^2 + 14x + 15 = 0$
=> (x+3) (3x+5)
=> x = -5/3, -3
II. $3y^2 +23y + 42 = 0$
=> (3y+14) (y+3)
=> y = -14/3, -3
So x ≥ y
4. Ans. D.
$X^2 – 23X + 130 = 0$
$X^2 – 13X – 10X + 130 = 0$
X(X – 13) – 10(X – 13) = 0
(X – 10)(X – 13) = 0
X = 10, 13
$Y^2 – 28Y + 195 = 0$
$Y^2 – 13Y – 15Y + 195 = 0$
Y(Y – 13) – 15(Y – 13) = 0
(Y – 13)(Y – 15) = 0
Y = 13, 15
Y ≥ X
5. Ans. B.

I. $3x^2-10x+8=0$
$3x^2-6x-4x+8=0$
x=4/3,2
II. $12y^2-17y+6=0$
$12y^2-9y-8y+6=0$
y=2/3,3/4
6. Ans. D.
$14^2-11^2+\dfrac{4^2}{2^2}$
$196-121+\dfrac{16}{4}$
196-121+4
79
7. Ans. D.
$\sqrt[4]{81.02} \times 63.99 + \sqrt{24.99} = ?^2$
$3 \times 64 + 5 = ?^2$
$192 + 5 = ?^2$
$197 = ?^2$
$14 = ?$
8. Ans. C.
19 × 23 – 280 = (?)
?=437-280
?=157
9. Ans. B.
$\sqrt{48.99} \times 104.21 \div 3 = 3^?$
$7*104=3^{?+1}$
$3^6 =3^{?+1}$
?=5
10. Ans. D.
$\dfrac{920}{25} \times 14 \cong 515$
? ≅
11. Ans. D.
14÷2+2=9
9×2+2=20
20÷2+2=12
12×2+2=26
26÷2+2=15
12. Ans. B.
The series is
3.2 *1.5= 4.8
4.8 ÷ 2= 2.4
2.4 *1.5= 3.6
3.6 ÷ 2= 1.8
13. Ans. A.
The series is $5^2 + 5 = 30$
$6^2 + 6 = 42$

$7^2 + 7 = 56$

$8^2 + 8 = 72$

$9^2 + 9 = 90$

$10^2 + 10 = 110.$

Thus, option (A) is correct choice.

14. Ans. A.

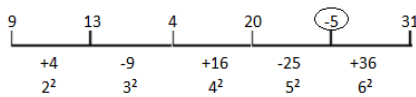The pattern followed is: 2, 4, 10, 32, ?, 652

$4 = 2*1 + 2$

$10 = 4*2 + 2$

$32 = 10*3 + 2$

? = 32*4 + 2, i.e. ? = 130

$652 = 130*5 + 2$

15. Ans. B.

Hence option B is the right answer.

16. Ans. B.

Number of members in production team = 44 – (7+4+3+6+5+8+6) = 5

Total age of remaining members = 40 x 5 – (46 + 35) = 119

Average age of remaining 3 members = 119/3 = 39.67 years

17. Ans. A.

Age of the 3rd person in HR = 39 x 3 – (44+35) = 38 years

Total age of the members of finance team = 45+34 + 38x2 = 155 years

Average age = 155/4 = 38.75 years

18. Ans. D.

Let the ages of the members of the sales team be a, a+d, a+2d, … a+7d

Sum of their ages = a + (a+d) + (a+2d) + …. (a+7d) = 33 x 8 = 264

=> 8a + 28d = 264

Putting d = 1, 2, 3, 4…

d	a
1	29.5
2	26
3	22.5
4	19

Since no employee in the company is below 20 years, we will take the values of a and d as 26 and 2 respectively. Hence, the age of the oldest member of the sales team = 26 + 14 = 40 years

19. Ans. E.

Let the ages of the oldest and the youngest member of the technical team be 5a and 3a respectively.

Total age of the team = 8a + 35.5 x 4 = 8a + 142

Average age = (8a + 142)/6 = (4a+71)/3

for the minimum value of a

5a > 35.5

a > 7

for the maximum a

3a < 35.5

a < 11

Putting a = 7, 8, 9, 10…

a	Average age
7	33
8	34.33
9	35.67
10	37

Hence, the possible average age is 35.67 years

20. Ans. C.

The average age of the remaining members of R&D team = (5 x 40.4 – 54 – 28)/3 = 40 years

The average age of the remaining members of operations team = 43 years

The average age of the operations team = (52+29 + 4x43)/6 = 42.17 years

21. Ans. B.

	Number of female customers live in building	Number of male customers live in building	Number of female customers who are part timers	Number of male customers who are part timers
DPS	23 x 12 = 276	28 x 12 = 336	708 – 276 = 432	696 – 336 = 360
VBS	32 x 12 = 384	31 x 12 = 372	852 – 384 = 468	792 – 372 = 420
HPS	38 x 12 = 456	33 x 12 = 396	960 – 456 = 504	876 – 396 = 480
MS	19 x 12 = 228	24 x 12 = 288	528 – 228 = 300	612 – 288 = 324
RPS	26 x 12 = 312	23 x 12 = 276	696 – 312 = 384	636 – 276 = 360

The number of part timers male customers in VBS = 420

The number of part timers female customers in VBS = 468

Required difference = 468 – 420 = 48

So option (b) is the correct answer.

22. Ans. D.

	Number of female customers live in building	Number of male customers live in building	Number of female customers who are part timers	Number of male customers who are part timers
DPS	23 x 12 = 276	28 x 12 = 336	708 – 276 = 432	696 – 336 = 360
VBS	32 x 12 = 384	31 x 12 = 372	852 – 384 = 468	792 – 372 = 420
HPS	38 x 12 = 456	33 x 12 = 396	960 – 456 = 504	876 – 396 = 480
MS	19 x 12 = 228	24 x 12 = 288	528 – 228 = 300	612 – 288 = 324
RPS	26 x 12 = 312	23 x 12 = 276	696 – 312 = 384	636 – 276 = 360

The number of female customers who are part timers in RPS = 384

The number of male customers who are part timers in RPS = 360

Required average = $\frac{384+360}{12} = 62$

So option (d) is the correct answer.

23. Ans. A.

	Number of female customers live in building	Number of male customers live in building	Number of female customers who are part timers	Number of male customers who are part timers
DPS	23 x 12 = 276	28 x 12 = 336	708 – 276 = 432	696 – 336 = 360
VBS	32 x 12 = 384	31 x 12 = 372	852 – 384 = 468	792 – 372 = 420
HPS	38 x 12 = 456	33 x 12 = 396	960 – 456 = 504	876 – 396 = 480
MS	19 x 12 = 228	24 x 12 = 288	528 – 228 = 300	612 – 288 = 324
RPS	26 x 12 = 312	23 x 12 = 276	696 – 312 = 384	636 – 276 = 360

The number of male customers who are part timers in DPS = 360

The number of male customers who are part timers in HPS = 480

Required ratio = $\frac{360}{480} = \frac{3}{4}$

So option (a) is the correct answer.

24. Ans. E.

	Number of female customers live in building	Number of male customers live in building	Number of female customers who are part timers	Number of male customers who are part timers
DPS	23 x 12 = 276	28 x 12 = 336	708 – 276 = 432	696 – 336 = 360
VBS	32 x 12 = 384	31 x 12 = 372	852 – 384 = 468	792 – 372 = 420
HPS	38 x 12 = 456	33 x 12 = 396	960 – 456 = 504	876 – 396 = 480
MS	19 x 12 = 228	24 x 12 = 288	528 – 228 = 300	612 – 288 = 324
RPS	26 x 12 = 312	23 x 12 = 276	696 – 312 = 384	636 – 276 = 360

The number of female customers who are part timers in MS = 300

The number of male customers who are part timers in MS = 324

Required percentage = $\frac{300}{324} \times 100 = 92.6\%$

So option (e) is the correct answer.

25. Ans. C.

	Number of female customers live in building	Number of male customers live in building	Number of female customers who are part timers	Number of male customers who are part timers
DPS	23 x 12 = 276	28 x 12 = 336	708 – 276 = 432	696 – 336 = 360
VBS	32 x 12 = 384	31 x 12 = 372	852 – 384 = 468	792 – 372 = 420
HPS	38 x 12 = 456	33 x 12 = 396	960 – 456 = 504	876 – 396 = 480
MS	19 x 12 = 228	24 x 12 = 288	528 – 228 = 300	612 – 288 = 324
RPS	26 x 12 = 312	23 x 12 = 276	696 – 312 = 384	636 – 276 = 360

The number of female customers who live in building = 276+384+456+228+312=1656

The number of male customers who live in building = 336+372+396+288+276=1668

Required difference = $1668 - 1656 = 12$

So option (c) is the correct answer.

26. Ans. A.

Total pens sold on Tuesday = 75

The ratio of the total defective pens sold to total pens sold is 7: 15

∴ Total number of non - defective pens sold on Tuesday = $\frac{(15-7)}{15} \times 75 = 40.$

27. Ans. A.

The total number of pens sold on Saturday = 30 × 1.4 = 42

Hence, the total number of Pens sold on Friday and Saturday together = 50 + 42 = 92

28. Ans. C.

Required difference = 25 + 75 − (45 + 50) = 5

29. Ans. B.

Total number of pens sold on Sunday = $\frac{75}{(100+25)} \times 100 = 60.$

30. Ans. A.

Number of blue ink pens sold on Thursday = $\frac{20}{100} \times 45 = 9$

Number of Red ink pens sold on Thursday = $\frac{25}{100} \times (45-9) = 9$

Number of Black ink pens sold on Thursday = 45 − 9 − 9 = 27.

∴Required sum = 9 + 27 = 36

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