SBI PO Mains Data Analysis & Interpretation Section Memory Based Paper 05.05.2025

Directions (1-4): The first term of the series which consist of six terms is m°. The second term of the series is the smallest even prime number. The third term of the series is the cube of the second term. The fourth term of the series is square of third term. The fifth term of the series is 16 times the fourth term of the series. (m is a natural number)

Q1. Find the sixth term of the series.
(a) 1024
(b) 31768
(c) 32766
(d) 32768
(e) 2244

Q2. Find the ratio of second term and fifth term of the series.
(a) 10:21
(b) 1:8
(c) 5:324
(d) 1:512
(e) 21:44

Q3. The sixth term is what percentage of 32 time the fifth term of the series.
(a) 5
(b) 4
(c) 3
(d) 2
(e) 1

Q4. If another series starts with 1.5, then find the fourth term of the new series.
(a) 90
(b) 93
(c) 102
(d) 99
(e) 96

Q5. A cuboid has a total surface area (TSA) of 94 sq. cm and a volume of 60 cubic cm. If its length is l cm, breadth is b cm, and height is h cm, l, b, and h, assuming all are positive and consecutive integers.
Given, l<b<h.
Quantity I: Find lateral Surface Area (LSA) of Cuboid.
Quantity II: Total Surface Area of a cube with side is 'b'.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

Q6. The time taken by A to complete a work is 20 days. B takes 2x% more days than A to complete the same work, and C takes x% more days than B to complete the work. The time taken by C alone to complete the work is equal to the sum of the time taken by A and B alone to complete the work. Find the time taken by all to complete 11 times the work.

(a) 120
(b) 130
(c) 100
(d) 180
(e) 200

Q7. Boat A travels a certain distance in downstream and upstream in 27 hours. Find the time taken by boat B to cover the same distance in downstream and in upstream. The downstream speed of boat A and B is 15 km/hr and 10 km/hr.The upstream speed of boat A and B is 12 km/hr and 9 km/hr.

(a) 22
(b) 38
(c) 10
(d) 18
(e) 23

Directions (8-11): Read the information carefully and answer the questions given below.

There are three Sets A, B, and C, which contain a total of 13 unique integers. Total of 'n' prime numbers is distributed among them. Set A has four numbers. The product of the smallest and largest number in Set A is 26. Set B has five numbers, but only two of them are prime numbers (others are composite). Set C has four numbers. The product of the smallest and largest number in Set C is 23, which is the highest number in all three sets.

Q8. If two prime number of set B < 11 and set C contains only one prime number, then find which of the following are the correct set of all the prime numbers?

(a) 2, 13, 13, 19, 23
(b) 2, 13, 17, 19, 23
(c) 2, 5, 7, 13, 19, 17, 23
(d) 2, 7, 11, 13, 17, 19, 23
(e) 2, 13, 13, 17, 19, 23

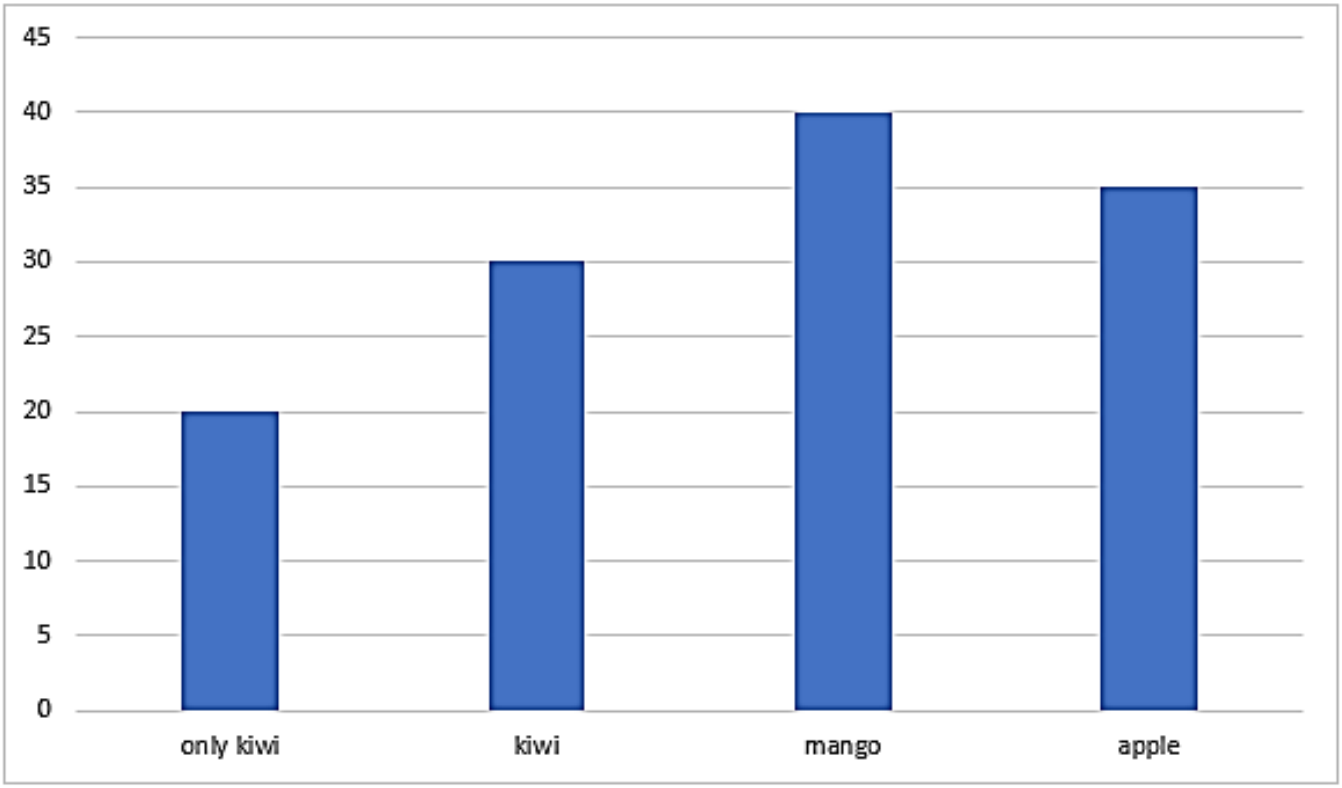
Q9. If n<8, and total prime number in set A>set B, then find the which set have least prime number?

(a) B
(b) C
(c) Can be B and C
(d) Can't be determined
(e) None of these

Q10. If the sum of all elements in set C is 43 and there is total seven prime numbers in all three sets, and the non-prime numbers in set C are consecutive even numbers, then find the sum of prime numbers in set A, 2nd number of set A>3?
(a) 21
(b) 15
(c) 27
(d) 30
(e) 33

Q11. If set C has highest prime numbers, then find minimum possible value of 'n'?
(a) 8
(b) 6
(c) 7
(d) Can't determined
(e) None of these

Directions (12-16): Read the data answer the following question.
There are 200 students in a school some student likes three different fruits apple, kiwi and mango and some students do not like any fruit. The bar graph given below shows the percentage distribution of students who like apple, mango, kiwi and only kiwi. No students like all three fruits.
Number of students who do not like any fruit are twice the number of students who like only Apple and mango together.
Number of students who do not like any fruit = Number of students who like only Apple and Kiwi together + 20.



Q12. How many students likes only two fruits together.
(a) 50
(b) 40
(c) 30
(d) 20
(e) 10

Q13. Total students like only kiwi are what percentage of difference between students like only apple and only mango.
(a) 500
(b) 400
(c) 300
(d) 200
(e) 100

Q14. The students who like only apple and kiwi together is what percentage more /less of who like only mango and kiwi together.
(a) 500
(b) 400
(c) 300
(d) 200
(e) 100

Q15. 20% of students who do not like any fruits like only red colour. The student who likes only red colour is how many less than who like apple.
(a) 66
(b) 99
(c) 77
(d) 100
(e) 96

Q16. Find the ratio of students like only kiwi and only mango to students who like mango and kiwi.
(a) 9:1
(b) 9:4
(c) 9:2
(d) 9:10
(e) 9:5

Directions (17-18): Read the following information carefully and answer the questions given below.
Piya and Siya are selling cakes on three days. i.e., Saturday, Sunday, and Monday. The ratio of cakes sold by Piya on Monday and Sunday is 1:2, respectively. The cakes sold by Siya on Monday is 20, and the cakes sold by Siya on Saturday is the same as the average cakes sold by Piya on all three days. The difference between the cakes sold by Piya and Siya on Monday is the same as the difference between the cakes sold by Piya and Siya on Saturday. Piya sold less cakes than Siya on each day.

Q17. The cakes sold by Siya on all three days together is 94. Find the cakes sold by Siya on Sunday.
(a) 20
(b) 12
(c) 15
(d) None of these
(e) Can't be determined

Q18. Which of the statement/s is/are can be correct.
I. If the cakes sold by Piya on Monday is 18, then total cakes sold by Siya on all three days together is 81.
II. The cakes sold by Piya on Saturday is 90.
III. If the cakes sold by Piya on Saturday is 21, then the lowest possible cakes sold by Siya on Sunday is 35.
(a) Only I
(b) Only II
(c) Only III
(d) Both I & II
(e) Both II & III

Directions (19-23): Read the following table carefully and answer the questions given below. The table shows basic pay, sales target, sale achieved and number of units sold by four different persons in 2018. Also, table shows some information about sales and incentives.
Note: I. Each unit costs are Rs 20.
II. Percentage of sales target realised $= \frac{\text{Sales achieved}}{\text{Sales target}} \times 100$
III. Sales target = 2.5 times the basic pay.

Persons	Basic pay (in Rs)	Sales target (in Rs)	Sales achieved (in Rs)	Number of units sold
A	3200	8000	----	250
B	----	7000	----	300
C	3600	----	4500	----
D	4000	10000	6600	330

Percentage of sales target realized	Incentive amount (in Rs)
Above 80%	10500
60% - 80%	7500
Less than 60%	6000

Q19. The number of units sold by X is the same as the average number of units sold by A and B. If the basic pay of X is the same as the average basic pay of C and D, then find the amount of incentive received by X.
(a) Rs 7500
(b) Can't be determined
(c) Rs 10500
(d) None of these
(e) Rs 6000

Q20. Which of the statement/s is/are correct?
I. The total amount of incentive earned by A and B together is R 15000.
II. The number of units sold by C is the lowest among all.
III. The total amount of incentive earned by C is less than that of D.
(a) All I, II & III
(b) Both I & III
(c) Both I & II
(d) Both II & III
(e) Only II

Q21. Find the incentive amount earned by B (in Rs).
(a) 10500
(b) 6000
(c) None of these
(d) 7500
(e) Can't be determined

Q22. Sales achieved by A are what percentage of the sales achieved by B?
(a) 78.5%
(b) 91.25%
(c) 83.33%
(d) 93.33%
(e) 90%

Q23. The basic pay of Y is 1.2 times the B, and Y had a sales target rate of 60%. Find the number of units sold by Y.
(a) 268
(b) 252
(c) 234
(d) 241
(e) 226

Q24. A, B, C, D, and E are five persons, and the total weight of all the persons is 200 kg. The total weight of A and B is 56 kg, and the weights of A and B are in the ratio of 3:5, respectively. The weight of C is more than A but less than B. Weight of B is less than D, and weight of E is more than D. (Note: the weights of all persons are integers)
Which of the statement/s is/are can be correct.
I. Maximum possible weight of C is 34 kg.
II. Maximum possible weight of E is 74 kg.
III. Maximum possible weight of D is 56 kg.
(a) All I, II & III
(b) Both I & III
(c) Only I
(d) Both II & III
(e) Only II

Directions (25-26): Read the following information carefully and answer the questions given below.

A set of natural numbers has to be formed that consists of six numbers, and the last number is 30. The first number of the set is the highest root of the given equation, and the second number of the set is (n+4) - 2n, where 'n' is the difference between the roots of the given equation. The third number of the set is $(n+1)^2 - (n+1)$. The fourth number of the set is $(n+2)^2 - (n+2)$. The fifth number of the set is $(n+1)^3 - (n+5)$. **(Note:** $x^2 - 14x + 48 = 0$)

Q25. Which of the statement/s is/are correct.

I. The product of second and fifth number is perfect square.
II. The average of last four number is 17.
III. If the seventh number of the set is sixth number + n^3, then the resultant number is a factor of 114.
(a) All I, II & III
(b) Both I & III
(c) Only I
(d) Only III
(e) Both II & III

Q26. Find the HFC of third and fourth number of the set.

(a) 12
(b) 6
(c) 2
(d) 3
(e) 4

Q27. The speed of trains A (S_a) and B (S_b), in km/hr with $S_a > S_b$, are the roots of the equation $x^2 - 130x + 4200 = 0$. Let T_a and T_b be their usual times in hours to cover a certain distance D km. If their speeds are swapped for the same distance D. (i.e. A travels at S_b and B travels at S_a), train A then takes (T_a + 2) hours and train B takes (T_b -2) hours. Find the sum of the original times (in hours), T_a and T_b.

(a) 22
(b) 21
(c) 25
(d) 24
(e) 26

Q28. The volume of a cuboid is 120 cubic meters, and the lateral surface area of the cuboid is 140 square meters. The length, breadth, and height of the cuboid are 'l', 'b', and 'h', respectively, and they are integers. (l > b)

Quantity I: 2l -b – h/2
Quantity II: 3b × l/h
Quantity III: 2b – l ÷ h
(a) Quantity I < Quantity II < Quantity III
(b) Quantity I < Quantity II > Quantity III
(c) Quantity I ≥ Quantity II = Quantity III
(d) Quantity I ≤ Quantity II > Quantity III
(e) Quantity I = Quantity < Quantity III

Q29. I. x^2 -Px + 32 = 0 (Roots of the equation is 4 and 4A.)
2(cube of root of Y) = Square of root of Y.
Quantity I: Find the value of 2a.
Z^2 – KZ + 990 = 0 (a and b are root of the equation and the value of K = 5P+3.)
Quantity II: Find the value of Y+A.
Quantity III: Find the value of (Y+2) – Highest root of the equation I.
(a) Quantity I < Quantity II < Quantity III
(b) Quantity I < Quantity II > Quantity III
(c) Quantity I ≥ Quantity II = Quantity III
(d) Quantity I ≤ Quantity II > Quantity III
(e) Quantity I = Quantity < Quantity III

Q30. Statement I: The length of cuboid B is 3/4 of the length of cuboid A. The height of cuboid A is 1.2 times that of cuboid B. The difference between the breadth of cuboids A and B is Z. The breadth of cuboids A and B is in the ratio of 8:3, respectively.
Statement II: The area of a cube is 225z square meters, and the side of the cube is the same as the breadth of the cuboid A.
Using both statements determined the value of Z.
(a) 30
(b) 6
(c) 9
(d) 12
(e) 24

Solutions

S1. Ans.(d)
Sol.
$m^0 = 1$
Second term = 2
Third term = 2^3=8
Fourth term of the series = 64
Fifth term = 16× 64 = 1024
1, 2, 8, 64, 1024 32768
2^1 2^2 2^3 2^4 2^5
Sixth term = 32768

S2. Ans.(d)
Sol.
$m^0 = 1$
Second term = 2
Third term = 2^3=8
Fourth term of the series = 64
Fifth term = 16× 64 = 1024
1, 2, 8, 64, 1024 32768
2^1 2^2 2^3 2^4 2^5
Required answer = 2:1024 = 1:512

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S3. Ans.(e)

Sol.

$m^0 = 1$

Second term = 2

Third term = 2^3=8

Fourth term of the series = 64

Fifth term = 16× 64 = 1024

1, 2, 8, 64, 1024 32768

2^1 2^2 2^3 2^4 2^5

Required answer = $\frac{32768}{1024\times32} = 1$

S4. Ans.(e)

Sol.

$m^0 = 1$

Second term = 2

Third term = 2^3=8

Fourth term of the series = 64

Fifth term = 16× 64 = 1024

1, 2, 8, 64, 1024 32768

2^1 2^2 2^3 2^4 2^5

1.5, 3, 12, 96

2^1 2^2 2^3

S5. Ans.(b)

Sol. We know, TSA = 2(lb+bh+hl)

And, TSA = 94 sq cm

Volume = l×b×h

And, volume = 60 cubic cm

Given, l, b and h are positive and consecutive integers

We will try different combinations of l, b, h such that their product is 60 and the TSA condition holds.

Let, l=3,b=4,h=5

Volume: 3×4×5=60

And, TSA: 2(lb+bh+hl)=2(3×4+4×5+5×3)

=2(12+20+15)=2(47)=94 sq cm

Both conditions follows, so l = 3, b = 4 and h = 5

Quantity I: LSA of a cuboid = 2h(l+b)

= 2×5×(3+4)

=2×5×7=70 sq cm

Quantity II: TSA of Cube with side = b = 4 cm

TSA of a cube = 6×side^2

=6×4^2

=6×16=96 cm^2

So, Quantity I < Quantity II

S6. Ans.(a)

Sol. Time taken by A = 20 days ...i

Time taken by B = 20×(1+2x%)....ii

Time taken by C = 20×(1+2x%)(1+x%).....iii

Now,

iii = i+ii

(1+2x%)(1+x%)=1+(1+2x%)

(1+2x%)(1+x%)=2(1+x%)

(1+2x%) = 2

100 + 2x = 200

100 = 2x

50 = x

Time taken by B = 40 days and time taken by C = 60

Total work = 120 (LCM of 40, 60, 20)

Efficiency of A = 120/20 = 6 unit per day

Efficiency of C = 120/60 = 2 unit per day

Efficiency of B = 120/40 = 3 unit per day

Required answer $=11\times\frac{120}{11}=120$ days

S7. Ans.(b)

Sol.

Let the distance travelled be 'd' km.

$\frac{d}{15}+\frac{d}{12}=27$

$\frac{4d+5d}{60}=27$

180 km = d

Required answer $=\frac{180}{9}+\frac{180}{10}=20+18=38\ hours$

S8. Ans.(b)

Sol. Set A (4 numbers, smallest × largest = 26)

26 = 2 × 13

So, smallest = 2, largest = 13

Choose two other numbers between 2 and 13 (excluding 2 and 13), such that they are unique.

Possible two number = 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Set B (5 numbers, only two are prime numbers)

Set C (4 numbers, smallest × largest = 23)

23 is a prime number, so smallest and largest must be 1 and 23, which is the highest number in all three sets.

Possible two prime numbers for set B = 3, 5, 7, 11, 17, 19

Two prime numbers of set B = 17 and 19

All are unique integers, so prime 13 can't be one of the prime numbers of set B

So, only (b) is correct.

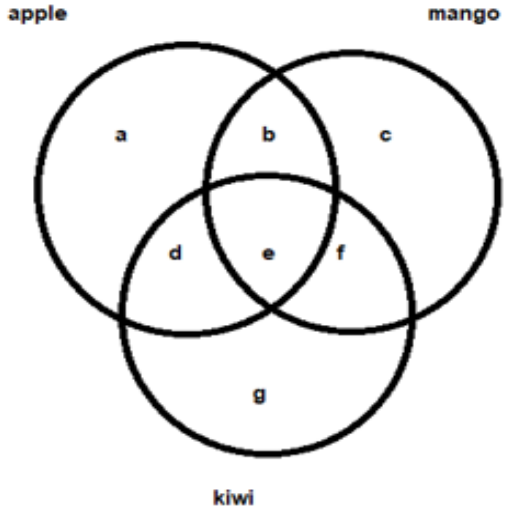
S9. Ans.(d)
Sol. Set A (4 numbers, smallest × largest = 26)
26 = 2 × 13
So, smallest = 2, largest = 13
Choose two other numbers between 2 and 13 (excluding 2 and 13), such that they are unique.
Possible two number = 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Set B (5 numbers, only two are prime numbers)
Set C (4 numbers, smallest × largest = 23)
23 is a prime number, so smallest and largest must be 1 and 23, which is the highest number in all three sets.
Possible two prime numbers for set B = 3, 5, 7, 11, 17, 19
There are three sets: A, B, C
The total number of unique elements = 13
The total number of prime numbers (n) < 8
Set A has more prime numbers than Set B
Set B has exactly two prime numbers
Set A has four numbers, smallest and largest are 2 and 13
Set C has four numbers, smallest and largest are 1 and 23, and 23 is the highest in all three sets
All elements are distinct
Prime count in Set B:
Given: Only 2 prime numbers in Set B
So, Set B = 2 primes
Prime count in Set A:
Given: Set A has more primes than Set B
So, Set A must have ≥ 3 primes
Set A = 3 or 4 primes
Set B = 2 primes
3. Total primes (n) < 8
So, n can be 6 or 7
So, C can have either 1 or 2 prime number

S10. Ans.(c)
Sol. Set A (4 numbers, smallest × largest = 26)
26 = 2 × 13
So, smallest = 2, largest = 13
Choose two other numbers between 2 and 13 (excluding 2 and 13), such that they are unique.
Possible two number = 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Set B (5 numbers, only two are prime numbers)
Set C (4 numbers, smallest × largest = 23)
23 is a prime number, so smallest and largest must be 1 and 23, which is the highest number in all three sets.
Possible two prime numbers for set B = 3, 5, 7, 11, 17, 19

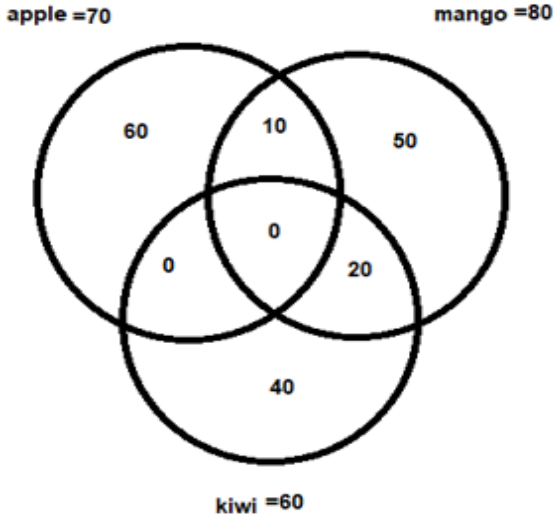
From the condition:
Set C has 4 numbers
One of them is prime = 23
The remaining 3 numbers are consecutive even numbers
Their sum = 43
Let the three even numbers be x-2, x, x+2
So,
(x-2)+x+(x+2)+23=43
3x=43-23
3x = 20
x=20/3 Not valid (must be integer)
Try again with different assumption: let 3 even numbers be x, x+2, x+4
x+x+2+x+4+23=43
3x=14
x = 14/3 (Still not valid)
Even numbers: 4, 6, 10
Sum = 4 + 6 + 10 + 23 = 43
non-primes = 4, 6, 10
Prime in Set C = 23
So: Set C = {4, 6, 10, 23}
Now, total primes so far:
B = 2 primes
C = 1 prime
So, far = 3 primes
Set A can have up to 4 primes
Assume: Set A = {2, 5, 7, 13}
Primes = all four
Now, find sum of primes in Set A:
2 + 5 + 7 + 13 = **27**

S11. Ans.(c)
Sol. Set A (4 numbers, smallest × largest = 26)
26 = 2 × 13
So, smallest = 2, largest = 13
Choose two other numbers between 2 and 13 (excluding 2 and 13), such that they are unique.
Possible two number = 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Set B (5 numbers, only two are prime numbers)
Set C (4 numbers, smallest × largest = 23)
23 is a prime number, so smallest and largest must be 1 and 23, which is the highest number in all three sets.
Possible two prime numbers for set B = 3, 5, 7, 11, 17, 19
Set A = 2 & 13
Set B has only 2 prime number
Set C two number 1 (non-prime number) and 23, in which 23 is one prime number
Given, C has highest prime numbers
So, total prime number C = 3
Possible value of n = 2+2+3=7

S12. Ans.(c)
Sol.

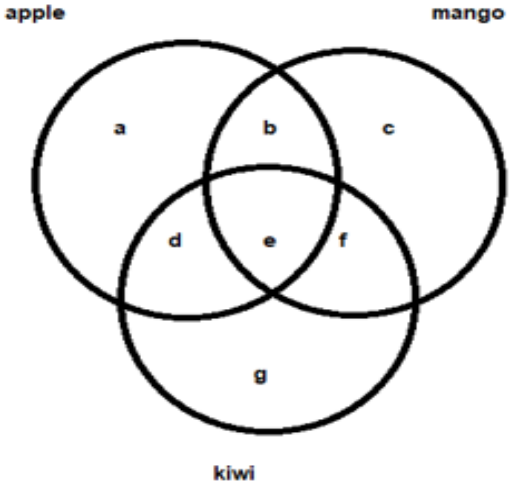


a+b + d + e = 35% of 200 = 70
b+c+e+f = 40% of 200 =80
d+e+f+g = 30% of 200 = 60
g = 20% of 200 = 40
e = 0
d+f = 20
f = 20 – d
& b +c + f = 80
a+b + d = 70
Number of students who do not like any fruit = 2b
Number of students who like only Apple and Kiwi together = d
2b = d+ 20
d = 2b – 20
200 = 2b + a+b+c+d+e+f+g
200 = 2b + 70 – d + 80 – f – b + d + 0 + 20 – d + 40
200 = 2b + 70 – d + 80 – 20+d – b + d + 0 + 20 – d + 40
200= b +190
10 = b

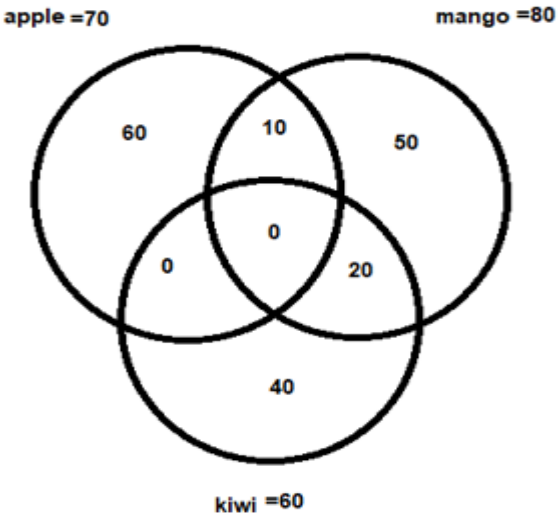


Required answer = 20+10 = 30

S13. Ans.(b)
Sol.

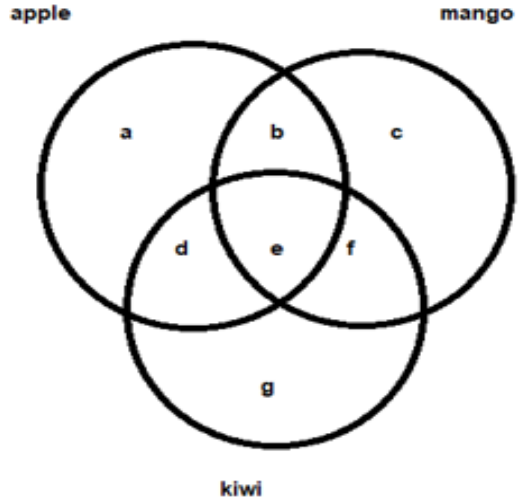


a+b + d + e = 35% of 200 = 70
b+c+e+f = 40% of 200 =80
d+e+f+g = 30% of 200 = 60
g = 20% of 200 = 40
e = 0
d+f = 20
f = 20 – d
& b +c + f = 80
a+b + d = 70
Number of students who do not like any fruit = 2b
Number of students who like only Apple and Kiwi together = d
2b = d+ 20
d = 2b – 20
200 = 2b + a+b+c+d+e+f+g
200 = 2b + 70 – d + 80 – f – b + d + 0 + 20 – d + 40
200 = 2b + 70 – d + 80 – 20+d – b + d + 0 + 20 – d + 40
200= b +190
10 = b



Required answer = $\frac{40}{60-50} \times 100 = 400\%$

S14. Ans.(e)
Sol.



a+b + d + e = 35% of 200 = 70
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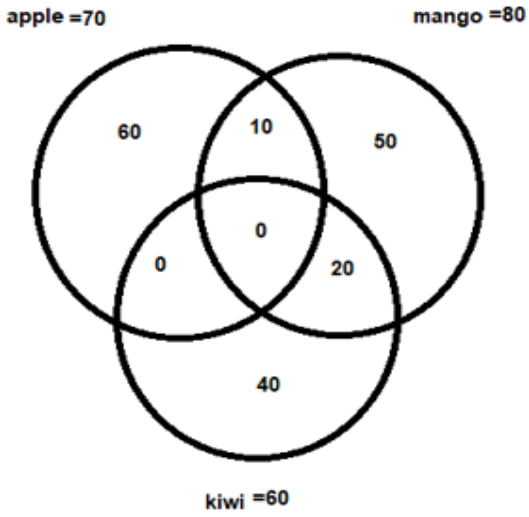
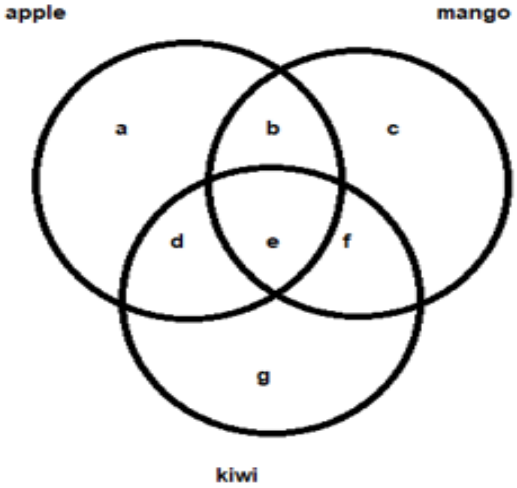
200 = 2b + 70 – d + 80 – 20+d – b + d + 0 + 20 – d + 40
200= b +190
10 = b



Required answer = $\frac{20-0}{20} \times 100 = 100\%$

S15. Ans.(a)
Sol.



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d+e+f+g = 30% of 200 = 60
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Number of students who do not like any fruit = 2b
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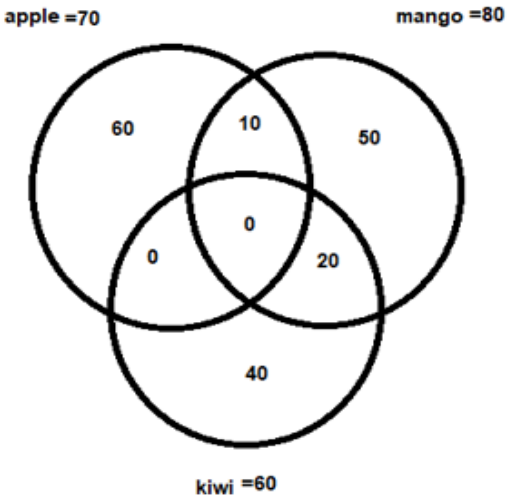
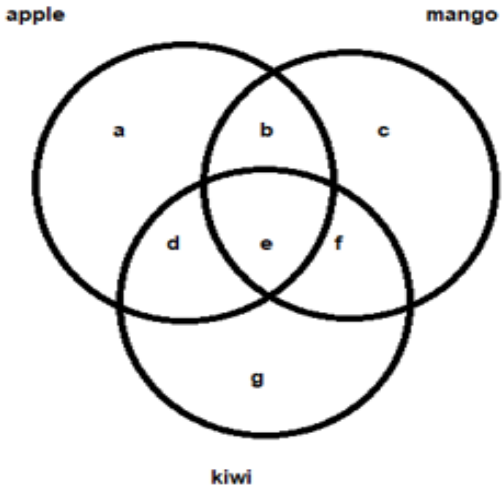
2b = d+ 20
d = 2b – 20
200 = 2b + a+b+c+d+e+f+g
200 = 2b + 70 – d + 80 – f – b + d + 0 + 20 – d + 40
200 = 2b + 70 – d + 80 – 20+d – b + d + 0 + 20 – d + 40
200= b +190
10 = b



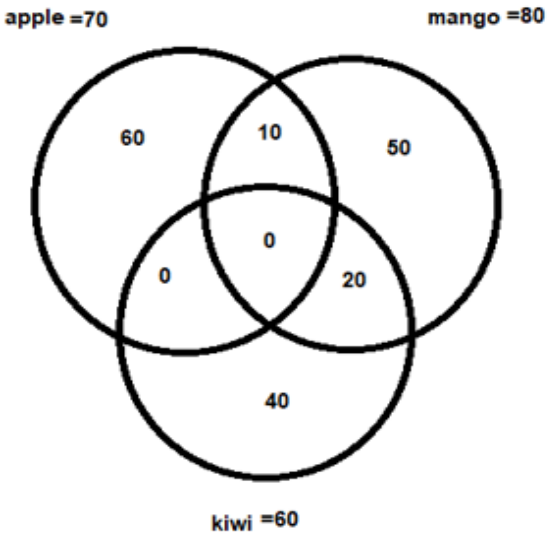
Only red = 20% of 2b = 4
Required answer = 70 – 4 = 66

Test Prime
ALL EXAMS, ONE SUBSCRIPTION.

S16. Ans.(c)
Sol.



a+b + d + e = 35% of 200 = 70
b+c+e+f = 40% of 200 =80
d+e+f+g = 30% of 200 = 60
g = 20% of 200 = 40
e = 0
d+f = 20
f = 20 – d
& b +c + f = 80
a+b + d = 70
Number of students who do not like any fruit = 2b
Number of students who like only Apple and Kiwi together = d
2b = d+ 20
d = 2b – 20
200 = 2b + a+b+c+d+e+f+g
200 = 2b + 70 – d + 80 – f – b + d + 0 + 20 – d + 40
200 = 2b + 70 – d + 80 – 20+d – b + d + 0 + 20 – d + 40
200= b +190
10 = b



Required answer = 40+50 : 20 = 9:2

S17. Ans.(e)
Sol. Let cakes sold by Piya on Monday and Sunday be x and 2x respectively
Let Piya sold cakes on all three days be 3y
Cakes sold by Siya on Saturday = 3y/3 = y
Cakes sold by Piya on Saturday = 3y – 3x
Given, 20 – x = y – (3y – 3x)
20 – x = 3x – 2y
20 = 4x – 2y…..(A)
The cakes sold by Siya on Monday = 20
The cakes sold by Siya on Saturday = y
The cakes sold by Siya on all three days together = 94
Let cakes sold by Siya on Sunday be Z
20 + y + Z = 94
y + Z = 74
We can't solve further

S18. Ans.(b)
Sol. Let cakes sold by Piya on Monday and Sunday be x and 2x respectively
Let Piya sold cakes on all three days be 3y
Cakes sold by Siya on Saturday = 3y/3 = y
Cakes sold by Piya on Saturday = 3y – 3x
Given, 20 – x = y – (3y – 3x)
20 – x = 3x – 2y
20 = 4x – 2y…..(A)
From I
The cakes sold by Piya on Monday =18
x = 18
x value put in (A)
20 = 4(18) – 2y
20 – 72 = -2y
52 = 2y
26 = y
Cakes sold by Siya on Saturday = y = 26
Cakes sold by Siya on Sunday = 81 – 26 - 20 = 35
Cakes sold by Piya on Sunday = 2x = 36 (Given, Piya sold less cakes than Siya on each day)
It is incorrect
From II
3y – 3x = 90
y – x = 30
y = 30 + x
y value put in A
20 = 4x – 2(30+x)
20 = 4x – 60 – 2x
80 = 2x
40 = x
y = 70
Cakes sold by Siya on Saturday = y = 40

Cakes sold by Piya on Saturday = 3y – 3x = 90 (Given, Piya sold less cakes than Siya on each day)
It is incorrect
From III
3y – 3x = 21
y – x = 7
y = x+7
y value put in A
20 = 4x – 2(x+7)
20 = 4x – 2x – 14
34 = 2x
17 = x
y = 24
Cakes sold by Piya on Sunday = 2x = 34
Possible cakes sold by Siya on Sunday = 35
It is correct.

S19. Ans.(e)
Sol.
For A
Sales achieved = 250 × 20 = Rs 5000
For B
Basic pay = $\frac{7000}{2.5}$ = Rs 2800
Sales achieved = 300 × 20 = Rs 6000
For C
Sales target = 3600 × 2.5 = Rs 9000
Number of units sold = $\frac{4500}{20}$ = 225
The number of units sold by X = $\frac{300+250}{2}$ = 275
Sales achieved = 275 × 20 = Rs 5500
Basic pay of X = $\frac{3600+4000}{2}$ = Rs 3800
Sales target = 3800 × 2.5 = Rs 9500
Percentage of sales target realized = $\frac{5500}{9500}$ × 100 = 57.89%= 58% (Approx)

S20. Ans.(d)
Sol.
For A
Sales achieved = 250 × 20 = Rs 5000
For B
Basic pay = $\frac{7000}{2.5}$ = Rs 2800
Sales achieved = 300 × 20 = Rs 6000
For C
Sales target = 3600 × 2.5 = Rs 9000
Number of units sold = $\frac{4500}{20}$ = 225

From I.
For A
Percentage of sales target realized = $\frac{5000}{8000} \times 100 = 62.5\%$
Amount of incentive earned by A =Rs 7500
For B
Percentage of sales target realized = $\frac{6000}{7000} \times 100 = 85.71\% = 86\%$ (Approx)
Amount of incentive earned by B =Rs 10500
Required amount = 7500 + 10500 = Rs 18000
I is Incorrect
From II.
The number of units sold by C = 225
It is lowest among all.
II is correct
From III.
For C
Percentage of sales target realized = $\frac{4500}{9000} \times 100 = 50\%$
Amount of incentive earned by C = Rs 6000
For D
Percentage of sales target realized = $\frac{6600}{10000} \times 100 = 66\%$
Amount of incentive earned by D = Rs 7500
The total amount of incentive earned by C is less than that of D.
III is correct

S21. Ans.(a)
Sol.
For A
Sales achieved = $250 \times 20 = $ Rs 5000
For B
Basic pay = $\frac{7000}{2.5} = $ Rs 2800
Sales achieved = $300 \times 20 = $ Rs 6000
For C
Sales target = $3600 \times 2.5 = $ Rs 9000
Number of units sold = $\frac{4500}{20} = 225$

Percentage of sales target realized $= \frac{6000}{7000} \times 100 =$ 85.71% = 86% (Approx)
Amount of incentive earned by B =Rs 10500

S22. Ans.(c)
Sol.
For A
Sales achieved = $250 \times 20 = $ Rs 5000
For B
Basic pay = $\frac{7000}{2.5} = $ Rs 2800
Sales achieved = $300 \times 20 = $ Rs 6000

For C

Sales target = 3600 × 2.5 = Rs 9000

Number of units sold = $\frac{4500}{20}$ = 225

Required percentage = $\frac{5000}{6000} \times 100 = 83.33\%$

S23. Ans.(b)

Sol.

For A

Sales achieved = 250 × 20 = Rs 5000

For B

Basic pay = $\frac{7000}{2.5}$ = Rs 2800

Sales achieved = 300 × 20 = Rs 6000

For C

Sales target = 3600 × 2.5 = Rs 9000

Number of units sold = $\frac{4500}{20}$ = 225

Basic pay of Y = 1.2× 2800 = Rs 3360

Let number of units sold be u

ATQ,

$60 = \frac{20 \times u}{2.5 \times 3360} \times 100$

252 = u

S24. Ans.(c)

Sol. Let the weight of C, D & E be c, d, & e respectively.

The weight of A = $56 \times \frac{3}{8} = 21$ kg

The weight of B = 56 – 21 = 35 kg

c + d + e = 200 – 56

= 144

Given, 21 < c < 35

d > 35

e > d

From I. Maximum possible weight of C is 34 kg. (correct)

From II. C's minimum weight = 22

D's minimum weight = 36

E's Maximum weight = 144 – 22 – 36 = 86 kg

Maximum possible weight of E is 74 kg. (incorrect)

From III. C's minimum weight = 22

D's weight be D kg

And E's weight D+2 kg (We can't take D+1 because the value of D came in fraction.)

144 = 22 + D + D+2

D = 60

E's weight = 62 kg

Maximum possible weight of D is 56 kg. (incorrect)

S25. Ans.(e)

Sol. $x^2 - 14x + 48 = 0$

$x = 6, 8$

Last number = 30

First number = 8

$n = 8 - 6 = 2$

Second number = $(n+4) - 2n$

$= (2+4) - 2(2)$

$= 2$

Third number = $(n+1)^2 - (n+1)$

$= (2+1)^2 - (2+1)$

$= 6$

Fourth number = $(n+2)^2 - (n+2)$

$= (2+2)^2 - (2+2)$

$= 12$

Fifth number = $(n+1)^3 - (n+5)$

$= (2+1)^3 - (2+5)$

20

Set = 8, 2, 6, 12, 20, 30

From I. Product of second and fifth number = 2×20=40

I is incorrect.

From II. The average of last four number $= \frac{30+20+12+6}{4} = 17$

II is correct

From III. Seventh number = sixth number + n^3

$= 30 + 2^3 = 38$

III is correct

S26. Ans.(b)

Sol. $x^2 - 14x + 48 = 0$

$x = 6, 8$

Last number = 30

First number = 8

$n = 8 - 6 = 2$

Second number = $(n+4) - 2n$

$= (2+4) - 2(2)$

$= 2$

Third number = $(n+1)^2 - (n+1)$

$= (2+1)^2 - (2+1)$

$= 6$

Fourth number = $(n+2)^2 - (n+2)$

$= (2+2)^2 - (2+2)$

$= 12$

Fifth number = $(n+1)^3 - (n+5)$
$= (2+1)^3 - (2+5)$
20
Set = 8, 2, 6, 12, 20, 30
HCF of 6 and 12 = 6

S27. Ans.(e)
Sol. $x^2 - 130x + 4200 = 0$
x = 60 & 70
$S_a = 70$ and $S_b = 60$
$D = 70 \times T_a$
$D = 60 \times T_b$
Their speeds are swapped for the same distance
$D = S_b (T_a + 2)$
$D = S_a (T_b - 2)$
$70 \times T_a = 60 (T_a + 2)$
$T_a = 12$
$60 \times T_b = 70 (T_b + 2)$
$T_b = 14$
Required sum = 12 + 14 = 26

S28. Ans.(a)
Sol. $l \times b \times h = 120$
And
$2(l+b)h = 140$
$(l + b)h = 70$
So, l = 4, b = 3 & h = 10
Quantity I: $2l - b - h/2$
$= 2(4) - 3 - 10/2$
= 0
Quantity II: $3b \times l/h$
$= 3(3) \times 4/10$
= 3.6
Quantity III: $2b - l \div h$
$= 2(3) - 4 \div 10$
= 5.6
So, **Quantity I < Quantity II < Quantity III**

S29. Ans.(d)
Sol. $x^2 - Px + 32 = 0$
$4^2 - P4 + 32 = 0$
$16 + 32 = 4P$
12 = P
$x^2 - 12x + 32 = 0$
x = 4, 8
4A = 8

A =2

$2\sqrt[3]{Y} = \sqrt{Y}$

Y = 64

Quantity I: $Z^2 - KZ + 990 = 0$

K = 5P + 3

K = 60 + 3 = 63

$Z^2 - 63Z + 990 = 0$

Z = 30 & 33

a = 30 or 33

b = 33 or 30

2a = 2 (33) = 66

2a = 2(30) = 60

Quantity II: The value = Y+A = 64 + 2 = 66

Quantity III: The value of (Y+2) – Highest root of the equation I

= 64 + 2 – 8 = 58

So, **Quantity I ≤ Quantity II > Quantity III**

S30. Ans.(b)

Sol. Statement I: Let the length of the cuboid A be 4l meter and length of the cuboid B is 3l meters.

Let the height of the cuboid B is 5h meter and height of the cuboid A is 6h meter.

Let the breadth of cuboid B and cuboid A be b & a meters respectively.

ATQ,

$$\frac{4l \times 6h \times a}{3l \times 5h \times b} = \frac{8}{3}$$

$$\frac{a}{b} = \frac{5}{3} = \frac{5y}{3y}$$

Given, 5y – 3y = Z

2y = Z

Statement II: Let the side of cube be 'a' meter

$6a^2 = 225Z$

From both statements together

$6(5y)^2 = 225(2y)$

y = 3

Z = 6