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Quantitative Aptitude

Directions (1-5): Following questions have two quantities as Quantity I and Quantity II. You have to determine the relationship between them and give an answer as,

1)

Quantity I: A and B started the business with the investment of Rs.5600 and Rs.3600 respectively. After 6 months B added Rs.400 more while Awithdrews Rs.600. If at the end of the year, the total profit of the business is Rs.18200 and then find the profit share of B.

Quantity II: Rs.x divided into three persons A, B and C. The share of A is double of B and the share of C is Rs.1000 more than that of B. If the ratio of the share of A and C is 6:5, then find the value of x?

A. Quantity I > Quantity II
B. Quantity I ≥ Quantity II
C. Quantity II > Quantity I
D. Quantity II ≤ Quantity I
E. Quantity I = Quantity II or Relation cannot be established

2)

Quantity I: 20%

Quantity II: A sum of Rs.4000 invested at R% per annum. If after two years the amounts to Rs.5760 and the rate of interest is compounded annually, then find the value of R?

A. Quantity I > Quantity II
B. Quantity I ≥ Quantity II
C. Quantity II > Quantity I
D. Quantity II ≤ Quantity I
E. Quantity I = Quantity II or Relation cannot be established

3)

Quantity I: A and B together can complete the work in 75% of the work in 12 days. If A started the work and after 16 days Aleft from the work and the B alone complete the two-third of the remaining work, in how many days B alone complete the whole work?

Quantity II: A and B can complete the work in 36 days and 18 days respectively. If A and B started working together, and after x days A left the work and then the whole completed in 12 days. Find the value of x?

A. Quantity I > Quantity II
B. Quantity I ≥ Quantity II
C. Quantity II > Quantity I
D. Quantity II ≤ Quantity I
E. Quantity I = Quantity II or Relation cannot be established

4)

Quantity I: Vessel contains 200 liters mixture of milk and water and the quantity of water is 40% of the vessel. If x liters of milk is added to the mixture, then the quantity of milk becomes double of the quantity of water, find the value of x?

Quantity II: 45 liters

A. Quantity I > Quantity II
B. Quantity I ≥ Quantity II
C. Quantity II > Quantity I

D. Quantity II ≤ Quantity I

E. Quantity I = Quantity II or Relation cannot be established

5)

Quantity I: There are 5 red balls, 4 blue balls and 3 white balls. If two balls are drawn at random, then find the probability that one is red and other is white?

Quantity II: The box contains 6 apples, 5 oranges and 9 bananas. If two fruits are drawn at random, then find the probability of that fruits are apple?

A. Quantity I > Quantity II

B. Quantity I ≥ Quantity II

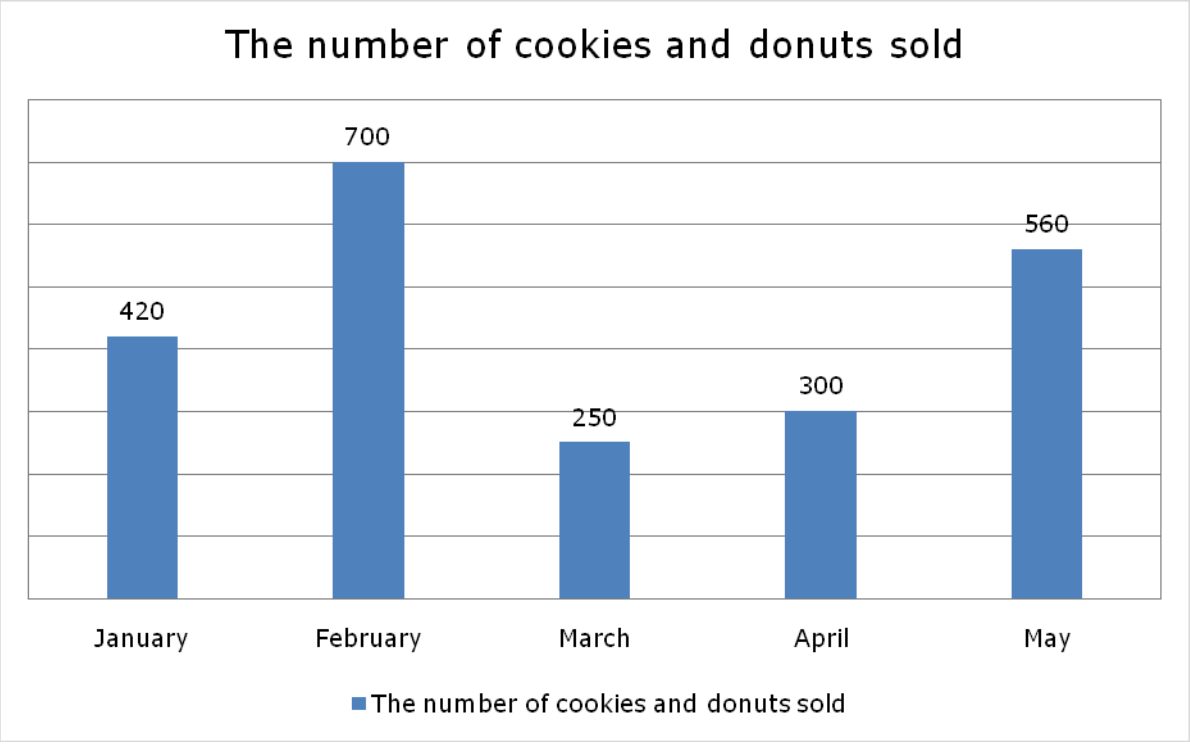
C. Quantity II > Quantity I

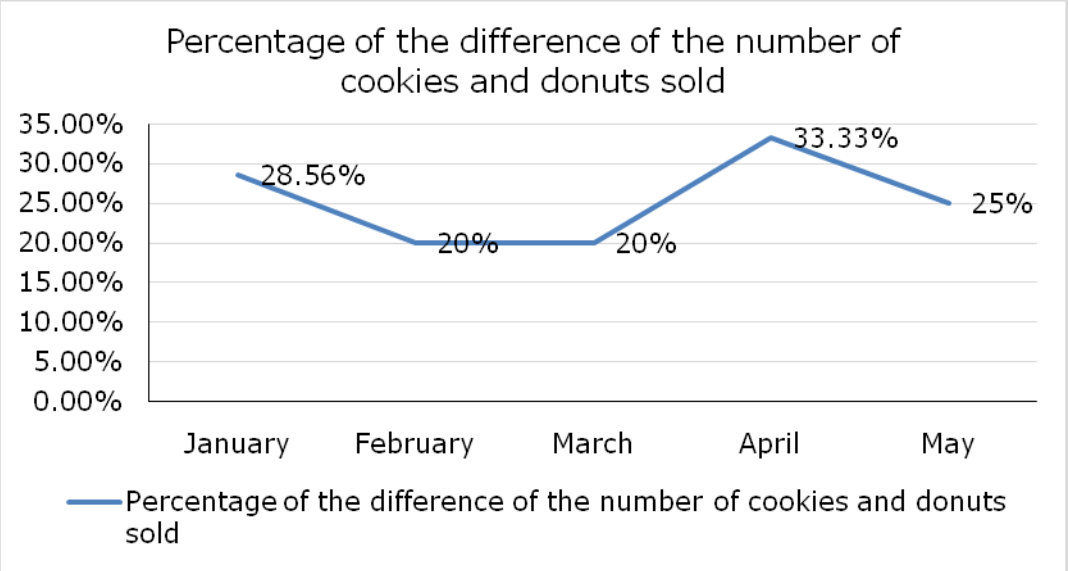
D. Quantity II ≤ Quantity I

E. Quantity I = Quantity II or Relation cannot be established

Directions (6-10): Read the following information carefully and answer the questions.

The given bar graph shows the number of cookies and donuts sold in five different months (January, February, March, April and May) and the given line graph shows the percentage of the difference of the number of cookies and donuts sold in five different months.





6) If the number of cookies and donuts sold in August is 16.66% more than that of January and the ratio of the number of cookies and donuts sold in August is 4:3 and then find the number of donuts sold in August?

A. 210
B. 150
C. 170
D. 280
E. None of these

7) The number of cookies and donuts sold in January is how much percentage more than the number of cookies and donuts sold in April?

A. 40%
B. 25%
C. 50%
D. 65%
E. None of these

8) Find the ratio of the difference of the number of cookies and donuts sold in January to April.

A. 4:1
B. 6:5
C. 7:8
D. 9:4
E. None of these

9) Out of the number of cookies and donuts sold in May, 37.5% of the cookies and donuts sold for males and the number of cookies sold for females in May is 210 and then find the number of donuts sold for females in May?

A. 210
B. 350
C. 140
D. 280
E. None of these

10) If the number of cookies sold in March and April is 200 and then find the ratio of the number of donuts sold in March and April?

A. 8:7
B. 5:6
C. 3:4
D. 2:1
E. None of these

11) Reeta sold an article at a discount of _____% on marked price, yet earned a profit of 20% on its cost price. Marked price of the article is Rs.400. Cost price of the article is Rs._____.

Which of the following options satisfy the given condition?

I. 10%, 300

II. 16%, 280

III. 7%, 320

A. Only I

B. Only II

C. Only III

D. Both I and II

E. Both II and III

12) Ravi invested a sum of Rs._____ on simple interest at 5% per annum for four years on scheme A. He invested the same amount on compound interest at 10% per annum for two years on scheme B. Total interest received by him from both the schemes is Rs._____.

Which of the following satisfies the two blanks given in the question?

A. 50000, 21000

B. 80000, 32800

C. 120000, 48200

D. 60000, 24800

E. None of these

13) A shelf in a library contains 8 Science books, _____ Mathematics books and 10 English books. Three books are drawn at random. Probability of that two books are either Science or Mathematics and one book is English is _____.

Which of the following options satisfy the given condition?

I. 6, 215/1012

II. 4, 17/77

III. 5, 380/1771

A. Both I and II

B. Both II and III

C. Both I and III

D. All I, II and III

E. Only II

14) Average of the present ages of Somu, Mina and Rahul is _____. Ratio of the present ages of Somu and Mina is 4:5 respectively. After four years, ratio of their ages will be 5:6. Rahul is _____ years older than Mina.

Which of the following satisfies the two blanks given in the question?

I. 13, 5

II. 14, 6

III. 21, 7

A. Only I

B. Only II

C. Only III

D. All I, II and III

E. Only I and II

15) Mohan, Sohan and Reena entered into a partnership with investment in the ratio 5:4:7. After one year, Mohan doubled his investment. After one more year, Sohan made his

investment 1.5 times. At the end of three years, they earned a total profit of Rs._____ and share of Sohan in the profit is Rs._____.
Which of the following satisfies the two blanks given in the question?
A. 90000, 25000
B. 80000, 20000
C. 100000, 26000
D. 120000, 28000
E. None of these

Directions (16-21): What value should come in the place of (?) in the following questions?
16) 15% of 4000 + 25% of 8000 =? * 13
A. 100
B. 200
C. 300
D. 400
E. None of these

17) 8/3 of [17^2 - 3^2 - 6^3] = 4/3 of (?)
A. 128
B. 256
C. 64
D. 512
E. None of these

18) 27 x (390 ÷ 13) – 40% of 760 + 4^3 = (?)
A. 470
B. 530
C. 570
D. 430
E. None of these

19) 20 x 16 + 46 x 43 + (3566.25 ÷ 3.75) = (?)^2
A. 57
B. 47
C. 53
D. 43
E. None of these

20) 4 2/3 + 8 1/3 = ? – 3 1/3
A. 7/3
B. 49/3
C. 40/3
D. 32/3
E. None of these

21) 18 * 23 + 12 * 41= ? + 43 * 21
A. 4
B. 5
C. 2
D. 3
E. 0

Direction (22-27): What value should come in the place of (?) in the following number series?
22) 6, 8, 19, 61, 249, ?
A. 1248
B. 1256
C. 1242
D. 1251
E. 1268

23) 5, 8, 21, 80, ?, 2364
A. 295
B. 355
C. 385

D. 395
E. 325

24) 4912, 2196, 1330, 342, 124, ?
A. 21
B. 46
C. 33
D. 26
E. 18

25) 20, 61, 185, 558, ?, 5039
A. 1732
B. 1678
C. 1782
D. 1692
E. 1818

26) 9, 63, 378, ?, 7560, 22680
A. 1890
B. 1570
C. 1940
D. 1680
E. 1450

27) 15, 39, 54, 62, 65, ?
A. 65
B. 70
C. 60
D. 75
E. 80

Directions (28-33): What approximate value should come in the place of (?) in the following questions?

28) $\sqrt{1090} * 2.19 + \sqrt{290} = ?^2 + \sqrt{5}$
A. 13
B. 5
C. 7
D. 11
E. 9

29) $(5.25)^2 - (2.32)^3 + 8.34 * 12.42 = ?$
A. 113
B. 200
C. 218
D. 340
E. 420

30) 12.49 % of (639.98) + $\sqrt{2025}$ % of 499.93 = $?^2$ + 15.87
A. 10
B. 16
C. 12
D. 17
E. 9

31) 80.18% of 719.91 - 35.15% of 399.891= ?
A. 428
B. 436
C. 448
D. 452
E. 456

32) 34.896% of 1200.24 + (64.101 × 75.017) – 4020.079= ?
A. 1360
B. 1600

C. 1400
D. 1240
E. 1200

33) $(23.9)^2 + (69.81)^2 + 12360.69 - (34.21)^2 = ?$
A. 16861
B. 16681
C. 18661
D. 16618
E. 16186

Directions (34-39): Find the wrong number in the given series

34) 20, 10, 15, 32.5, 131.25
A. 32.5
B. 10
C. 131.25
D. 20
E. None of these

35) 4896, 4796, 4675, 4531, 4362, 4165
A. 4165
B. 4362
C. 4531
D. 4675
E. 4796

36) 26, 39, 28, 43, 34, 48, 44
A. 48
B. 44
C. 28
D. 43
E. None of these

37) 29, 154, 118, 460, 397, 1126
A. 29
B. 154
C. 118
D. 460
E. 397

38) 40, 60, 90, 145, 202.5, 303.75
A. 60
B. 202.5
C. 90
D. 303.75
E. 145

39) 71, 83, 59, 107, 10, 203
A. 203
B. 10
C. 107
D. 59
E. 83

Directions (40-45): Following question contains two equations as I and II. You have to solve both equations and determine the relationship between them and give an answer as,

40)
I) $x^2 + 3x + 2 = 0$
II) $y^2 - y - 2 = 0$
A. $x > y$
B. $x \geq y$
C. x = y or relationship can't be determined.
D. $x < y$
E. $x \leq y$

41)

I) $x^2 + 20x + 99 = 0$

II) $y^2 + 17y + 72 = 0$

A. x> y

B. x ≥ y

C. x = y or relationship can't be determined.

D. x< y

E. x ≤ y

42)

I) $x^2 – 6x – 247 = 0$

II) $y^2 – 40y + 399 = 0$

A. x> y

B. x ≥ y

C. x = y or relationship can't be determined.

D. x< y

E. x ≤ y

43)

I) $2x^2 – 24x + 40 = 0$

II) $y^2 + 13y - 14 = 0$

A. x> y

B. x ≥ y

C. x = y or relationship can't be determined.

D. x< y

E. x ≤ y

44)

I) $x^2 + 18x + 65 = 0$

II) $y^2 + 19y + 84 = 0$

A. x> y

B. x ≥ y

C. x = y or relationship can't be determined.

D. x< y

E. x ≤ y

45)

I) $x^2 + 8x – 9 = 0$

II) $y^2 – 23y + 22 = 0$

A. x> y

B. x ≥ y

C. x = y or relationship can't be determined.

D. x< y

E. x ≤ y

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Answer Key with Explanation

1) Answer: A

From quantity I,

Profit share of A and B = (5600 * 6 + 5000 * 6):(3600 * 6 + 4000 * 6)

= 53:38

Profit share of B = 38/91 * 18200 = Rs.7600

From quantity II,

A = 6a

C = 5a

B = 6a/2 = 3a

5a – 3a = 1000

a = 500

x = 6a + 5a + 3a = 14 * 500 = 7000

Quantity I >quantity II

2) Answer: E

From quantity II,

$5760 = 4000 * (1 + R/100)^2$

1.2 = 1 + R/100

R =20%

Quantity I = quantity II

3) Answer: A

From quantity I,

A + B = 12 * 100/75 = 16 days

A alone complete 1/3 of the work in 16 days

A alone complete the whole work in 3 * 16 = 48 days

B = 1/16 – 1/48

B = 1/24

From quantity II,

x/36 + 12/18 = 1

x/36 = 1/3

x = 12

Quantity I>quantity II

4) Answer: C

From Quantity I,

Milk in 200 liters = 60/100 * 200 = 120 liters

Water in 200 liters = 40/100 * 200 = 80 liters

(120 + x)/80 = 2/1

160 = 120 + x

X = 40 liters

Quantity I<quantity II

5) Answer: A

From quantity I,

Required probability = $5C_1 * 3C_1/12C_2$

= 5 * 3/6 * 11

= 5/22

From quantity II,

Required probability = $6C_2/20C_2$

= 6 * 5/20 * 19

= 3/38

Quantity I>quantity II

6) Answer: A

The number of cookies and donuts sold in August=420*7/6=490

The number of donuts sold in August=490*3/7=210

7) Answer: A

Required percentage = (420-300) / 300 * 100 = 120 / 3 = 40%

8) Answer: B

The difference of the number of cookies and donuts sold in January=28.56% of 420 =420*2/7=120

The difference of the number of cookies and donuts sold in April=33.33% of 300=300/3 =100

Required ratio=120:100=6:5

9) Answer: C

The number of cookies and donuts sold for females in May=560*5/8=350

The number of cookies and donuts sold for males in May=560*3/8=210

The number of cookies sold for females in May=210

The number of donuts sold for females in May=350-210=140

10) Answer: C

The number of cookies and donuts sold in March=250

The difference of the number of cookies and donuts sold in March=250/5=50

The number of cookies sold in March=150 or 100

The number of donuts sold in March=150 or 100

The number of cookies and donuts sold in April=300

The difference of the number of cookies and donuts sold in April=300/3=100

The number of cookies sold in April=200 or 100

The number of donuts sold in April=200 or 100

The number of cookies sold in March and April=200

The number of donuts sold in March=150

The number of donuts sold in April=200

Required ratio=150:200=3:4

11) Answer: D

We know that

MP x (100 - %D) = CP x (100 + %P)

I.

LHS = 400 x (100 – 10) = 400 x 90 = 36000

RHS = 300 x (100 + 20) = 300 x 120 = 36000

LHS = RHS

This satisfies the given condition.

II.

LHS = 400 x (100 – 16) = 400 x 84 = 33600

RHS = 280 x (100 + 20) = 280 x 120 = 33600

LHS = RHS

This satisfies the given condition.

III.

LHS = 400 x (100 – 7) = 400 x 93 = 37200

RHS = 320 x (100 + 20) = 320 x 120 = 38400

LHS ≠ RHS

This does not satisfy the given condition.

12) Answer: B

We know that

SI = (P x r x t)/100

And

CI = P x $(1 + r/100)^t$ – P

Option (a)

SI = (50000 x 5 x 4)/100

= Rs.10000

CI = 50000 x 110/100 x 110/100 – 50000

= 60500 – 50000

= Rs.10500

Total interest = 10000 + 10500 = Rs.20500

This does not satisfy the given condition.

Option (b)

SI = (80000 x 5 x 4)/100

= Rs.16000

CI = 80000 x 110/100 x 110/100 – 80000

= 96800 – 80000

= Rs.16800

Total interest = 16000 + 16800 = Rs.32800

This satisfies the given condition.

Option (C)

SI = (120000 x 5 x 4)/100

= Rs.24000

CI = 120000 x 110/100 x 110/100 – 120000

= 145200 – 120000

= Rs.25200

Total interest = 24000 + 25200 = Rs.49200

This does not satisfy the given condition.

Option (d)

SI = (60000 x 5 x 4)/100

= Rs.12000

CI = 60000 x 110/100 x 110/100 – 60000

= 72600 – 60000

= Rs.12600

Total interest = 12000 + 12600 = Rs.24600

This does not satisfy the given condition.

13) Answer: D

I.

$[(^{8}C_2 + {}^{6}C_2) \times {}^{10}C_1]/{}^{24}C_3$

= [(28 + 15) x 10]/2024

= (43 x 10)/2024

= 215/1012

This satisfies the given condition.

II.

$[(^{8}C_2 + {}^{4}C_2) \times {}^{10}C_1]/{}^{22}C_3$

= [(28 + 6) x 10]/1540

= (34 x 10)/1540

= 17/77

This satisfies the given condition.

III.

$[(^{8}C_2 + {}^{5}C_2) \times {}^{10}C_1]/{}^{23}C_3$

= [(28 + 10) x 10]/1771

= (38 x 10)/1771

= 380/1771

This satisfies the given condition.

14) Answer: C

Let, present ages of Somu and Mina be 4k years and 5k years respectively.

(4k + 4)/(5k + 4) = 5/6

=> 24k + 24 = 25k + 20

=> 25k – 24k = 24 – 20

=> k = 4

Present age of Somu = 4k = 4 x 4 = 16 years

Present age of Mina = 5k = 5 x 4 = 20 years

I.

Rahul = 20 + 5 = 25 years

Average = (16 + 20 + 25)/3 = 61/3 = 20.33 years

This does not satisfy the given condition.

II.

Rahul = 20 + 6 = 26 years

Average = (16 + 20 + 26)/3 = 62/3 = 20.67 years

This does not satisfy the given condition.

III.

Rahul = 20 + 7 = 27 years

Average = (16 + 20 + 27)/3 = 63/3 = 21 years
This satisfies the given condition.

15) Answer: D

Let the initial amount invested by Mohan, Sohan and Reena be Rs.5k, Rs.4k and Rs.7k respectively.
Ratio of shares in the profit:
Mohan: Sohan: Reena = (5k + 10k x 2): (4k x 2 + 6k): (7k x 3)
= 25k: 14k: 21K
= 25: 14: 21

Option (a)

Share of Sohan in the profit = 14/(25 + 14 + 21) x 90000
= 14/60 x 90000
= Rs.21000
This does not satisfy the given condition.

Option (b)

Share of Sohan in the profit = 14/(25 + 14 + 21) x 80000
= 14/60 x 80000
= Rs.18666.67
This does not satisfy the given condition.

Option (c)

Share of Sohan in the profit = 14/(25 + 14 + 21) x 100000
= 14/60 x 100000
= Rs.23333.33
This does not satisfy the given condition.

Option (d)

Share of Sohan in the profit = 14/(25 + 14 + 21) x 120000
= 14/60 x 120000
= Rs.28000
This satisfies the given condition.

16) Answer: B

15% of 4000 + 25% of 8000 =? * 13
=> 600 + 2000 =? * 13
=> 200

17) Answer: A

8/3 x (289 – 9 – 216) = 4/3 x (?)
(?) = 8/3 x 3/4 x 64
(?) = 128

18) Answer: C

(?) = 27 x 30 – 304 + 64
(?) = 810 – 240
(?) = 570

19) Answer: A

320 + 1978 + 951 = (?)²
(?)² = 3249
(?) = 57

20) Answer: B

4 2/3 + 8 1/3 = ? – 3 1/3
=> 14/3 + 25/3 + 10/3
=> 49/3

21) Answer: D

18 * 23 + 12 * 41 = ? + 43 * 21
414 + 492 = ? + 903
? = 3

22) Answer: D

6 * 1 + 2 = 8

8 * 2 + 3 = 19

19 * 3 + 4 = 61

61 * 4 + 5 = 249

249 * 5 + 6 = **1251**

23) Answer: D

5*2 – 2= 8

8 *3 – 3= 21

21 *4 – 4= 80

80 *5 – 5= **395**

395*6 – 6= 2364

24) Answer: D

17^3 – 1 = 4912

13^3- 1 = 2196

11^3- 1 = 1330

7^3- 1 = 342

5^3- 1 = 124

3^3- 1 = **26**

25) Answer: B

20 * 3 + 1 = 61

61 * 3 + 2 = 185

185 * 3 + 3 = 558

558 * 3 + 4 = **1678**

1678 * 3 + 5 = 5039

26) Answer: A

9 * 7 = 63

63 * 6 = 378

378 * 5 = **1890**

1890 * 4 = 7560

7560 * 3 = 22680

27) Answer: A

15 + 5^2 – 1 = 39

39 + 4^2 – 1 = 54

54 + 3^2 – 1 = 62

62 + 2^2 – 1 = 65

65 + 1^2 – 1 = **65**

28) Answer: E

√1090 * 2.19 + √290 = $?^2$ + √5

66 + 17 = $?^2$ + 2

? = 9

29) Answer: A

$(5.25)^2$ – $(2.32)^3$ + 8.34 * 12.42 = ?

=> 5^2 – 2^3 + 8 * 12

=> 25 – 8 + 8 * 12

=> 113

30) Answer: D

12.49 % of (639.98) + √2025 % of 499.93 = $?^2$ + 15.87

12.5 % of 640 + 45 % of 500 = $?^2$ + 16

80 + 225 = $?^2$ + 16

289 = $?^2$

17= ?

31) Answer: B

80.18% of 719.91 - 35.15% of 399.891 = ?

576 – 140= ?

? = 436

32) Answer: E

34.896% of 1200.24 + (64.101 × 75.017) – 4020.079= ?

35% of 1200 + (64×75) – 4020 = ?

420 + 4800 – 4020 = ?

5220 – 4020 =?

1200 = ?

33) Answer: B

$(23.9)^2 + (69.81)^2 + 12360.69 – (34.21)^2$ =?

$24^2 + 70^2$ +12361 – 34^2= ?

576 + 4900+ 12361 – 1156 =?

16681 =?

34) Answer: A

20*0.5=10

10*1.5=15

15*2.5=**37.5**

37.5*3.5=131.25

35) Answer: A

4896 – 100 = 4796

4796 – 121 = 4675

4675 – 144 = 4531

4531 – 169 = 4362

4362 – 196 = **4166**

36) Answer: A

The pattern of given series is:

26,

39 = 26 + 13,

28 = 39 - 11,

43 = 28 + 15,

34 = 43 - 9,

51 = 34 + 17,

44 = 51 - 7,

Thus, the wrong number is 48 and the correct number is 51

37) Answer: D

29 + 5^3 = 154

154 – 6^2 = 118

118 + 7^3 = **461**

461 – 8^2 = 397

397 + 9^3 = 1126

38) Answer: E

40 * 1.5 = 60

60 * 1.5 = 90

90 * 1.5 = **135**

135 * 1.5 = 202.5

202.5 * 1.5 = 303.75

39) Answer: B

71 + 12 = 83

83 – 24 = 59

59 + 48 = 107

107 – 96 = **11**

11 + 192 = 203

40) Answer: E

$x^2 + 3x + 2 = 0$

$x^2 + 2x + x + 2 = 0$

$x(x + 2) + 1(x + 2) = 0$

$(x + 1)(x + 2) = 0$

$x = -1, -2$

$y^2 – y – 2 = 0$

$y^2 – 2y + y – 2 = 0$

$y(y - 2) + 1(y - 2) = 0$

$(y + 1)(y - 2) = 0$

$y = -1, 2$

$x \leq y$

41) Answer: E

$x^2 + 20x + 99 = 0$

$x^2 + 9x + 11x + 99 = 0$

$x(x + 9) + 11(x + 9) = 0$

$(x + 9)(x + 11) = 0$

$x = -11, -9$

$y^2 + 17y + 72 = 0$

$y^2 + 9y + 8y + 72 = 0$

$y(y + 9) + 8(y + 9) = 0$

$(y + 8)(y + 9) = 0$

$y = -8, -9$

$x \leq y$

42) Answer: E

$x^2 - 6x - 247 = 0$

$x^2 - 19x + 13x - 247 = 0$

$x(x - 19) + 13(x - 19) = 0$

$(x + 13)(x - 19) = 0$

$x = 19, -13$

$y^2 - 40y + 399 = 0$

$y^2 - 21y - 19y + 399 = 0$

$y(y - 21) - 19(y - 21) = 0$

$(y - 21)(y - 19) = 0$

$y = 21, 19$

$x \leq y$

43) Answer: A

$2x^2 - 24x + 40 = 0$

$2x^2 - 20x - 4x + 40 = 0$

$2x(x - 10) - 4(x - 10) = 0$

$(2x - 4)(x - 10) = 0$

$x = 2, 10$

$y^2 + 13y - 14 = 0$

$y^2 + 14y - y - 14 = 0$

$y(y + 14) - 1(y + 14) = 0$

$(y - 1)(y + 14) = 0$

$y = 1, -14$

$x > y$

44) Answer: C

$x^2 + 18x + 65 = 0$

$x^2 + 13x + 5x + 65 = 0$

$x(x + 13) + 5(X + 13)\ 0$

$(x + 5)(x + 13) = 0$

$x = -5, -13$

$y^2 + 19y + 84 = 0$

$y^2 + 12y + 7y + 84 = 0$

$y(y + 12) + 7(y + 12) = 0$

$(y + 7)(y + 12) = 0$

$y = -7, -12$

Relationship between x and y cannot be established.

45) Answer: E

$x^2 + 8x - 9 = 0$

$x^2 + 9x - x - 9 = 0$

$x(x + 9) - 1(x + 9) = 0$

$(x - 1)(x + 9) = 0$

$x = 1, -9$

$y^2 - 23y + 22 = 0$

$y^2 - 22y - y + 22 = 0$

$y(y - 22) - 1(y - 22) = 0$

$(y - 1)(y - 22) = 0$

y = 1, 22	x ≤ y