'a' and 'b' are the roots of the equation $x^2 - 6x - 16 = 0$, where $a > b$. If $Z_n = a^n - b^n$ for $n > 0$, then find the value of $\dfrac{Z_3}{Z_2 - Z_1}$ = ?

1. 48/5
2. 52/5
3. 48/7
4. 52/3
5. Not

A number series is given in the following question. First element of a new series is also given followed by (a), (b), (c), etc. Determine the unknown element in the new series based upon the pattern followed by the given series.

8, 23, 90, 447, 2678

5, (a), (b), (c), (d), (e)

What will come in place of (d)?

1. 1848
2. 1598
3. 2126
4. 1967
5. 2286

For a > 0 and b > 0

I. $x^2 + (b - 2a) x + a^2 - ab = 0$

II. $y^2 + (3b - 2a) y + a^2 - 3ab + 2b^2 = 0$

1. x > y
2. x < y
3. x ≥ y
4. x ≤ y
5. x = y
   or
   cnd

A number series is given in the following question. First element of a new series is also given followed by (a), (b), (c), etc. Determine the unknown element in the new series based upon the pattern followed by the given series.

9, 11, 25, 79, 321, 1611

8, (a), (b), (c), (d), (e)

what will come in place of (b)

1. 23
2. 22
3. 18
4. 20
5. 17

A shopkeeper sells four different items namely A, B, C and D. The cost price of product A is Rs. 320 less than the cost price of product B. The shopkeeper sells product B for Rs. 1020 at a profit of 6.25% . The average cost price of each of the four products is Rs. 720. The average marked price of product B and C is Rs. 1100. The shopkeeper allows a single discount of 15% on product B and gives two successive discounts of 10% and 20% on product C.The shopkeeper gives a single discount of 25% on product D and still earns a profit of 50%. The average discount earned by shopkeeper on selling products B, C and D is 220. The shopkeeper marks-up the cost price of product A by 12.5% and allows a single discount of 5.55%.

एक दुकानदार A, B, C और D नाम की चार अलग-अलग वस्तुओं को बेचता है। वस्तु A का क्रय मूल्य वस्तु B के क्रय मूल्य से 320 रुपये कम है। दुकानदार वस्तु B को 6.25% के लाभ पर 1020 रुपये में बेचता है। चार वस्तुओं में से प्रत्येक का औसत मूल्य 720 रुपये है। वस्तु B और C का औसत अंकित मूल्य 1100 रुपये है। दुकानदार वस्तु B पर 15% की एकल छूट देता है और वस्तु C पर 10% और 20% की दो क्रमिक छूट देता है। दुकानदार वस्तु D पर 25% की एकल छूट देता है और फिर भी 50% का लाभ अर्जित करता है। वस्तु B, C और D को बेचने पर दुकानदार द्वारा अर्जित औसत छूट 220 रुपये है। दुकानदार वस्तु A के क्रय मूल्य को 12.5% अंकित करता है और 5.55% की एकल छूट देता है।

A shopkeeper sells four different items namely A, B, C and D. The cost price of product A is Rs. 320 less than the cost price of product B. The shopkeeper sells product B for Rs. 1020 at a profit of 6.25% . The average cost price of each of the four products is Rs. 720. The average marked price of product B and C is Rs. 1100. The shopkeeper allows a single discount of 15% on product B and gives two successive discounts of 10% and 20% on product C.The shopkeeper gives a single discount of 25% on product D and still earns a profit of 50%. The average discount earned by shopkeeper on selling products B, C and D is 220. The shopkeeper marks-up the cost price of product A by 12.5% and allows a single discount of 5.55%.

What is the average marked price of each of the four products ?

Product	Cost price	Marked price	Selling price
A	640	720	680
B	960	1200	1020
C	880	1000	720
D	400	800	600

1. Rs. 910
2. Rs. 920
3. Rs. 930
4. Rs. 940
5. NOT

What is the average selling price of each of the four products ?

Product	Cost price	Marked price	Selling price
A	640	720	680
B	960	1200	1020
C	880	1000	720
D	400	800	600

1. Rs. 752
2. Rs. 753
3. Rs. 754
4. Rs. 755
5. NOT

What is the ratio of marked price of product A and cost price of product C respectively ?

Product	Cost price	Marked price	Selling price
A	640	720	680
B	960	1200	1020
C	880	1000	720
D	400	800	600

1. 7 : 11
2. 8 : 11
3. 9 : 11
4. 10 : 11
5. NOT

What is the average profit earned by the shopkeeper on selling products A, B and D ?

Product	Cost price	Marked price	Selling price
A	640	720	680
B	960	1200	1020
C	880	1000	720
D	400	800	600

1. Rs. 100
2. Rs. 200
3. Rs. 300
4. Rs. 400
5. NOT

Loss occurred by the shopkeeper on selling product C is how much percent less/more than the discount allowed on product A ?

Product	Cost price	Marked price	Selling price
A	640	720	680
B	960	1200	1020
C	880	1000	720
D	400	800	600

1. 200%
2. 300%
3. 400%
4. 500%
5. NOT

In the given series find the value of x, y and z

a) x, 490, 523, 582, 619, 682

b) 7, 31, 79, y, 367, 751

c) 25000, 5000, 1000, z, 40,8

1. y < x = z
2. y > z > x
3. x > y = z
4. x > z > y
5. z > y > x

Directions: In the given series A, B, C, D are positive integers that are given in terms of x, y and z which are also positive integers.

A, B, C, D,?

Set - 1.

x = HCF (9, 15)

$y^2 + 5y - 84 = 0$ (positive root)

z = 2y + x

Set - 2.

A = $x^2 + xy + z$

B = $x^3 + xy + z - 5$

C = $x^2y + z + 2x$

D = $xy^2 - z - 5$

What will come in the place of '?'

1. 136
2. 177
3. 184
4. 229
5. 333

In the following series, one of the terms given is wrong which is denoted by N.

Series : 85, 175, 355, 715, 1380

Find that term and mark the statement whose value is equivalent to $\frac{N}{30} + 1$ and mark that as your answer.

1. It is a prime number.
2. It is nearest to 40 which is closest multiple of 5.
3. Sum of digit is less than 9
4. Product of digits is more than 30
5. None of these

B and D works alternatively, if B is twice efficient than D, then in how many days they can complete the work if B starts the work?
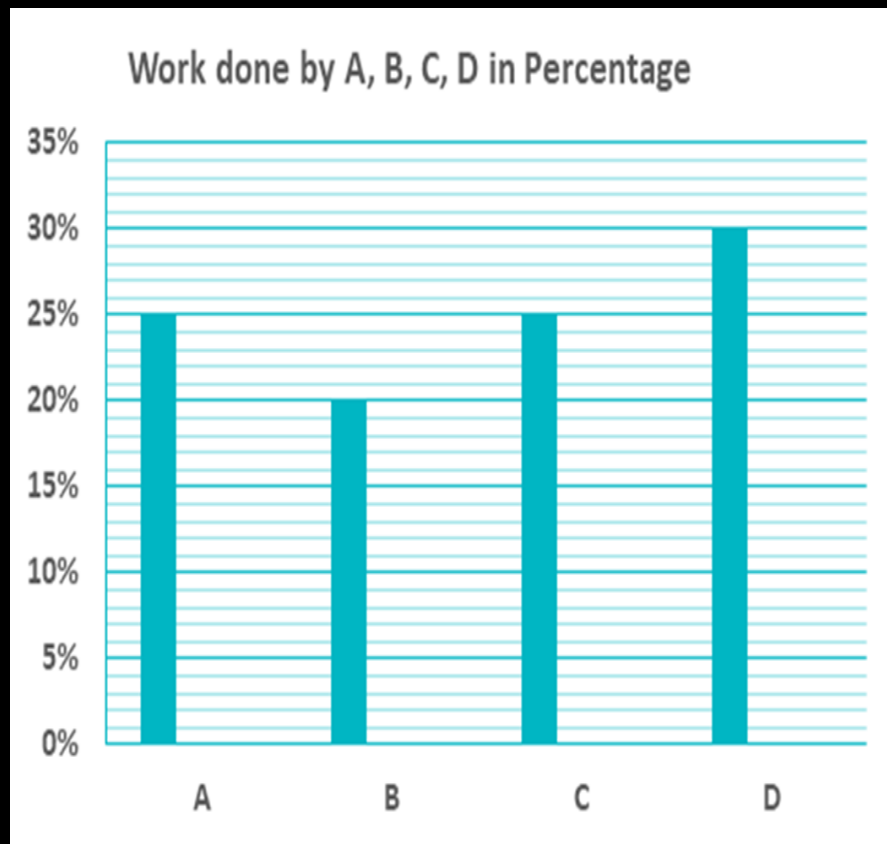

Work done by A, B, C, D in Percentage
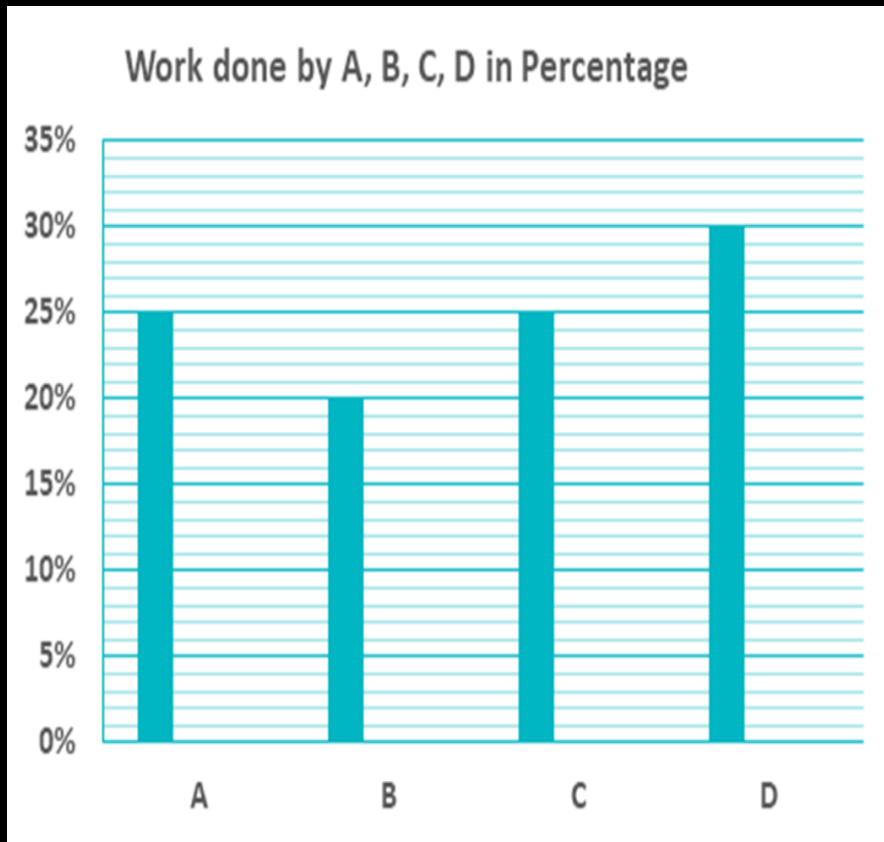
Worker	Number of Days
A	8
B	---
C	---
D	6

1. 12 days
2. 10 days
3. 13 days
4. 9 days
5. NOT

A and D starts working together, but after 10 days E joins them. If E is 4 times as efficient as A then in how many days the whole work will be completed?

Work done by A, B, C, D in Percentage

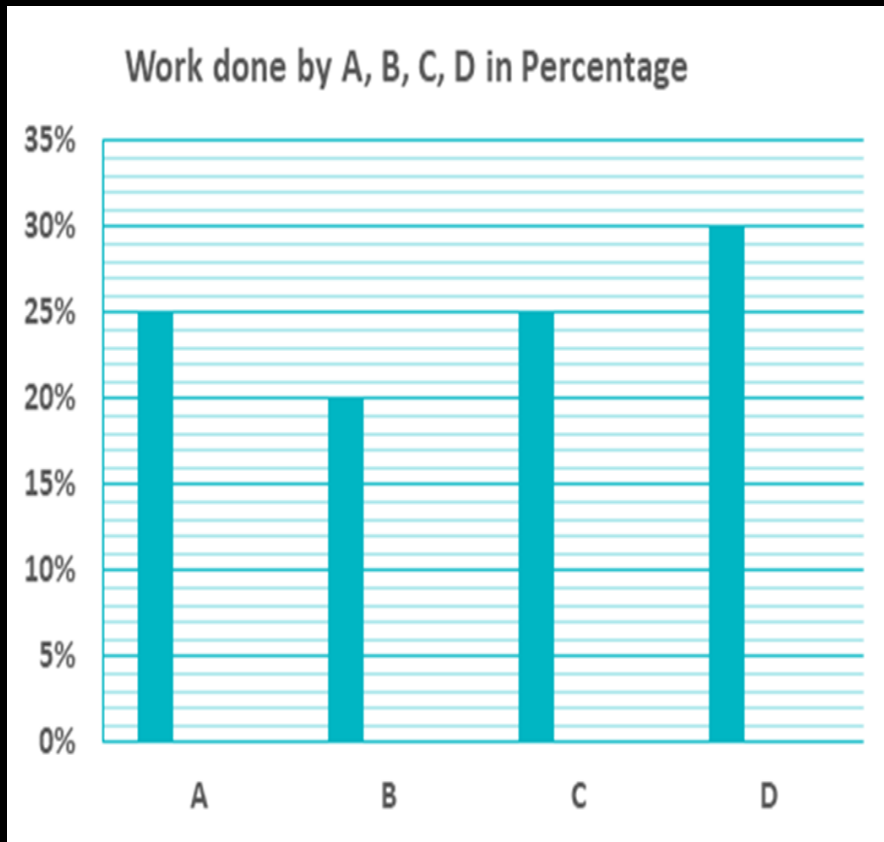| Worker	Number of Days
A	8
B	---
C	---
D	6

1. 10 days
2. (10/11) days
3. 12 days
4. 15 days
5. (120/11) days

C started working with (1/3)rd of his efficiency and worked for 4 days then left. It is found that C is twice as efficient as D. If the remaining work done by D with (2/3)rd of his efficiency then in how many days the work will be completed?

Work done by A, B, C, D in Percentage
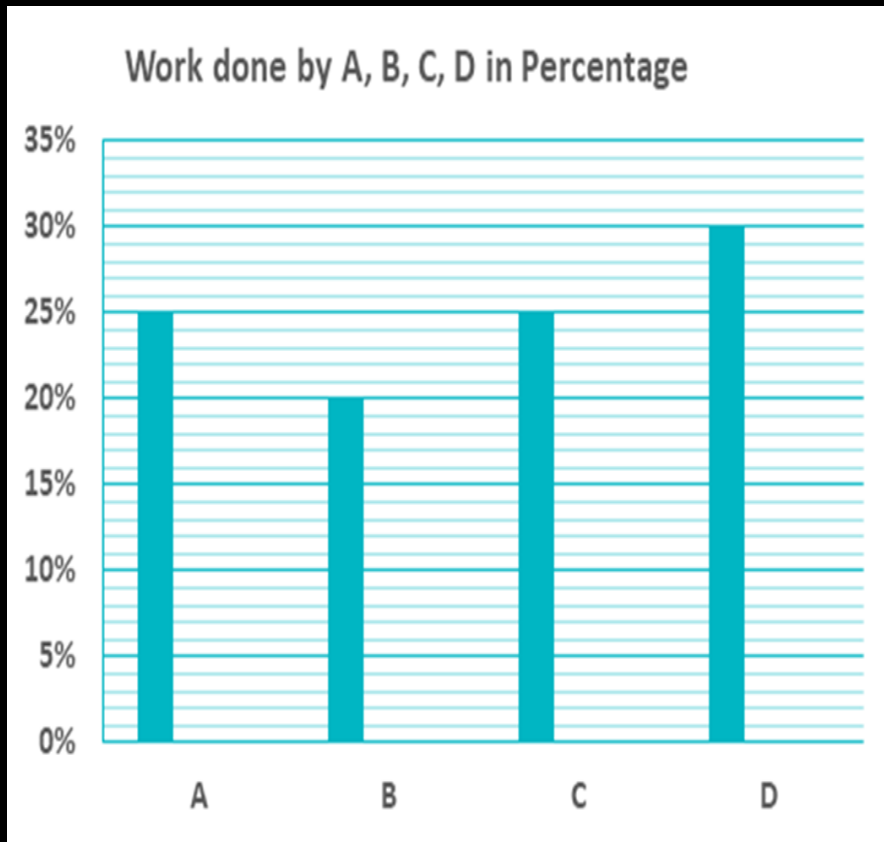
Worker	Number of Days
A	8
B	---
C	---
D	6

1. 6 days
2. 4 days
3. 30 days
4. 20 days
5. NOT

C and D started working together, but after 5 days D left and C completed the rest of the work in 3 days. In how many approximate days C can complete the work alone?

Work done by A, B, C, D in Percentage

Worker	Number of Days
A	8
B	---
C	---
D	6

1. 11.6 days
2. 9.6 days
3. 10.6 days
4. 12 days
5. NOT

If the ratio of A's efficiency and B's efficiency is 1 : 3, then in how many days B can complete 20% of the work?

Work done by A, B, C, D in Percentage
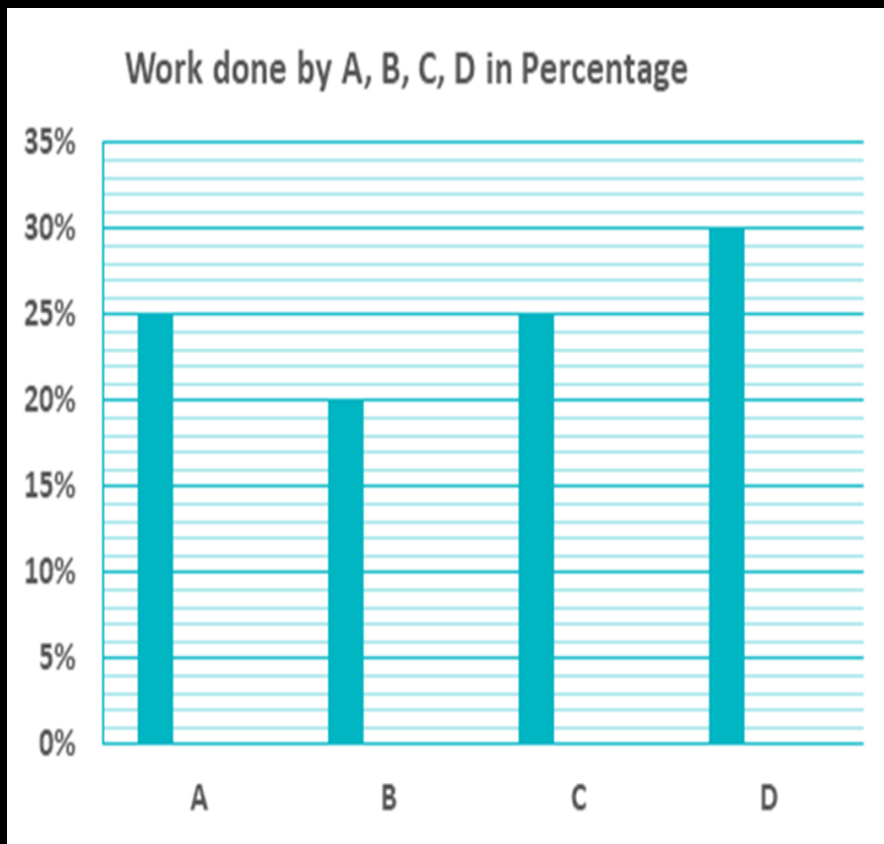
Worker	Number of Days
A	8
B	---
C	---
D	6

1. 2.13 days
2. 4 days
3. 2.89 days
4. 6 days
5. NOT

Directions: Study the data carefully answer the following questions given below
The table given below shows the cost price, marked up % and discount % of five models of Redmi phones in a Mi store.

Product	Cost price (CP)	Marked up %	Discount %
Redmi Note 10 pro	18000	30	–
Redmi Note 10 pro Max	–	–	10
Poco M3	24999	–	–
Mi lite 11x	–	20	15
Mi 10 lite NE	25000	–	25

A buyer purchased a Redmi Note 10 pro from the Mi store, they gave him a discount of 15% on the selling price along with it they gave him an additional cash voucher of Rs. 1000. In this whole transaction find the profit percentage of the Mi store(Nearest to one decimal).

Product	Cost price (CP)	Marked up %	Discount %
Redmi Note 10 pro	18000	30	–
Redmi Note 10 pro Max	–	–	10
Poco M3	24999	–	–
Mi lite 11x	–	20	15
Mi 10 lite NE	25000	–	25

1. 1.5%
2. 2%
3. 3%
4. 4.9%
5. 3.9%

Marked price of Poco M3 is 200% of cost price of Redmi Note 10 pro, then find the profit percentage on selling(approx). It is given that numerical values of profit and discount are same.

Product	Cost price (CP)	Marked up %	Discount %
Redmi Note 10 pro	18000	30	–
Redmi Note 10 pro Max	–	–	10
Poco M3	24999	–	–
Mi lite 11x	–	20	15
Mi 10 lite NE	25000	–	25

1. 21%
2. 22%
3. 20%
4. 23%
5. 25%

Find profit or loss % on selling Mi lite 11x.

Product	Cost price (CP)	Marked up %	Discount %
Redmi Note 10 pro	18000	30	–
Redmi Note 10 pro Max	–	–	10
Poco M3	24999	–	–
Mi lite 11x	–	20	15
Mi 10 lite NE	25000	–	25

1. 3%
2. − 2%
3. 2%
4. − 3%
5. CND

Find the ratio between marked price of Redmi Note 10 pro and marked price of Mi 10 lite NE, when Mi 10 lite NE is sold at a profit of 20%.

Product	Cost price (CP)	Marked up %	Discount %
Redmi Note 10 pro	18000	30	–
Redmi Note 10 pro Max	–	–	10
Poco M3	24999	–	–
Mi lite 11x	–	20	15
Mi 10 lite NE	25000	–	25

1. 40 : 41
2. 117 : 200
3. 200 : 117
4. 5 : 9
5. 9 : 5

The marked price of Redmi Note 10 pro Max is Rs. 26666 and 20% profit was earned from it while selling. Find the cost price (Nearest to one decimal).

Product	Cost price (CP)	Marked up %	Discount %
Redmi Note 10 pro	18000	30	–
Redmi Note 10 pro Max	–	–	10
Poco M3	24999	–	–
Mi lite 11x	–	20	15
Mi 10 lite NE	25000	–	25

1. Rs. 20000
2. Rs. 19999
3. Rs. 21999
4. Rs. 21000
5. Rs. 22000

Example: Find the wrong number in the following series and following the pattern find the fourth of the series starting with the wrong number.

32, 34, 36, 39, 40, 42

Here, the pattern of the series is the difference of 2.

Here the wrong number in the series is 39

So, Starting with '39' the series will be 39, 41, 43, 45

Therefore, the fourth term is 45.

Similarly, following the above pattern, find the fourth term in the 2nd series.

78, 80, 83, 88, 95, 104

1. 112
2. 102
3. 124
4. 114
5. 122

Example: Find the wrong number in the following series and following the pattern find the fourth of the series starting with the wrong number.

32, 34, 36, 39, 40, 42

Here, the pattern of the series is the difference of 2.

Here the wrong number in the series is 39

So, Starting with '39' the series will be 39, 41, 43, 45

Therefore, the fourth term is 45.

Similarly, following the above pattern, find the fourth term in the 2nd series.
37, 41, 50, 63, 91, 127

1. 92
2. 146
3. 48
4. 58
5. 102

Example: Find the wrong number in the following series and following the pattern find the fourth of the series starting with the wrong number.

32, 34, 36, 39, 40, 42

Here, the pattern of the series is the difference of 2.

Here the wrong number in the series is 39

So, Starting with '39' the series will be 39, 41, 43, 45

Therefore, the fourth term is 45.

Similarly, following the above pattern, find the fourth term in the 2nd series.
9, 19, 58, 229, 1166, 6997

1. 368
2. 12462
3. 5513
4. 1286
5. 98

Example: Find the wrong number in the following series and following the pattern find the fourth of the series starting with the wrong number.

32, 34, 36, 39, 40, 42

Here, the pattern of the series is the difference of 2.

Here the wrong number in the series is 39

So, Starting with '39' the series will be 39, 41, 43, 45

Therefore, the fourth term is 45.

Similarly, following the above pattern, find the fourth term in the 2nd series.

192, 191, 195, 172, 236, 111

1. 212
2. 1136
3. 125
4. 195
5. 175

Example: Find the wrong number in the following series and following the pattern find the fourth of the series starting with the wrong number.

32, 34, 36, 39, 40, 42

Here, the pattern of the series is the difference of 2.

Here the wrong number in the series is 39

So, Starting with '39' the series will be 39, 41, 43, 45

Therefore, the fourth term is 45.

Similarly, following the above pattern, find the fourth term in the 2nd series.
48, 50, 62, 96, 178, 328

1. 74
2. 146
3. 182
4. 432
5. 106

Directions: Answer the questions based on the information given below.

A bus runs on five different days from Monday to Friday and it has a certain number of passenger seats. The total seats in the bus is 45 out of which the ratio of seats reserved for males and females is 5: 4 respectively. 20% of male seats and 25% of female seats are reserved for emergency and can't be booked by any means. The average number of male and female passengers in the bus on Monday is 15 while male passengers in the bus on Tuesday is 2 more than the male passengers in the bus on Monday. The total number of female passengers in the bus on Tuesday and Wednesday is same which is the same as the total number of male passengers in the bus on Friday. The total number of male passengers in the bus on Thursday is 2 more than the total number of male passengers in the bus on Friday while the total number of female passengers in the bus on Thursday is 4 less than male passengers in the bus on that day. The total number of passengers (male + female) in the bus on Thursday is the same as the number of male passengers in the bus on Tuesday. The total number of female passengers in the bus on Friday is 15 while the average number of female passengers in the bus on all the five days is 11 and the average number of male passengers in the bus on all the five days is 14.

Days	Average of male kid and female kid	Percentage of female that are kid
Monday	3	-
Tuesday	-	30%
Wednesday	2	-
Thursday	5	75%
Friday	-	-

Note : (1) Male passengers can sit only in the seats booked for male passengers and vice-versa.
(2) Fare for one adult male and one adult female passenger is Rs.120 and Rs.100 respectively.
(3) Fare of one male Kid and female kid is 75% of fare of one male adult and female adult respectively.
(4) To calculate the maximum fare the emergency seats are also considered.

A bus runs on five different days from Monday to Friday and it has a certain number of passenger seats. The total seats in the bus is 45 out of which the ratio of seats reserved for males and females is 5: 4 respectively. 20% of male seats and 25% of female seats are reserved for emergency and can't be booked by any means. The average number of male and female passengers in the bus on Monday is 15 while male passengers in the bus on Tuesday is 2 more than the male passengers in the bus on Monday. The total number of female passengers in the bus on Tuesday and Wednesday is same which is the same as the total number of male passengers in the bus on Friday. The total number of male passengers in the bus on Thursday is 2 more than the total number of male passengers in the bus on Friday while the total number of female passengers in the bus on Thursday is 4 less than male passengers in the bus on that day. The total number of passengers (male + female) in the bus on Thursday is the same as the number of male passengers in the bus on Tuesday. The total number of female passengers in the bus on Friday is 15 while the average number of female passengers in the bus on all the five days is 11 and the average number of male passengers in the bus on all the five days is 14.

Out of the total passengers in the bus on Friday, 40% are kids, and the ratio of male kids to female kids is 1: 4. If 'x' more passengers boarded to the bus on that day out of which one was a kid and the remaining were adults. The total fare collected from the bus on Friday is increased by Rs.570 from the original fare, then what is the value of 'x'?

Days	Male	Female
Monday	18	12
Tuesday	20	10
Wednesday	10	10
Thursday	12	8
Friday	10	15

Days	Average of male kid and female kid	Percentage of female that are kid
Monday	3	-
Tuesday	-	30%
Wednesday	2	-
Thursday	5	75%
Friday	-	-

1. 1
2. 2
3. 3
4. 4
5. 5

If average number of female kid passengers in the bus on Wednesday and Thursday is 3, then what is the average of total fare collected from the bus on Wednesday and Thursday together ?

Days	Male	Female
Monday	18	12
Tuesday	20	10
Wednesday	10	10
Thursday	12	8
Friday	10	15

Days	Average of male kid and female kid	Percentage of female that are kid
Monday	3	-
Tuesday	-	30%
Wednesday	2	-
Thursday	5	75%
Friday	-	-

1. Rs. 1850
2. Rs. 2025
3. Rs. 2125
4. Rs. 2150
5. Rs. 3275

If the total fare collected from the bus on Wednesday is 41.8% of the maximum fare that can be collected from the bus, then what is the difference between male kid passengers and female kid passengers in the bus on Wednesday?

Days	Male	Female
Monday	18	12
Tuesday	20	10
Wednesday	10	10
Thursday	12	8
Friday	10	15

Days	Average of male kid and female kid	Percentage of female that are kid
Monday	3	-
Tuesday	-	30%
Wednesday	2	-
Thursday	5	75%
Friday	-	-

1. 0
2. 3
3. 4
4. 5
5. CND

If out of the total passengers in the bus on Tuesday, approximately 26.67% are kids, then the total fare collected from the bus on Tuesday is what percent of the maximum fare amount can be collected from the bus?

Days	Male	Female
Monday	18	12
Tuesday	20	10
Wednesday	10	10
Thursday	12	8
Friday	10	15

Days	Average of male kid and female kid	Percentage of female that are kid
Monday	3	-
Tuesday	-	30%
Wednesday	2	-
Thursday	5	75%
Friday	-	-

1. 48.5%
2. 63.5%
3. 67.5%
4. 72.5%
5. 75%

Total amount of fare collected form the bus on Monday is Rs.3195, then what is the ratio of male kids to female kids in the bus on Monday?

Days	Male	Female
Monday	18	12
Tuesday	20	10
Wednesday	10	10
Thursday	12	8
Friday	10	15

Days	Average of male kid and female kid	Percentage of female that are kid
Monday	3	-
Tuesday	-	30%
Wednesday	2	-
Thursday	5	75%
Friday	-	-

1. 1 : 1
2. 2 : 3
3. 3 : 4
4. 5 : 4
5. 6 : 5

1. a

1. a

1. a

1. a

1. a

1. a

1. a

1. a

1. a

1. a