

# **IKKISH**

# **Arithmetic**

# **Problems**

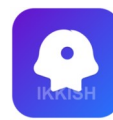
**FOR BANKING, SSC & RAILWAY  
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Deepak and Bhavna can together finish a task in 9 days. If the time Deepak requires to complete 90% of the work is equal to the time Bhavna requires to complete 60% of the work, how many days will Deepak take to finish 40% of the work?

- (A) 4
  - (B) 5
  - (C) 6
  - (D) 9
  - (E) None of these
- 

The average age of a father, mother, and their child is 27 years. The mother is 32 years old, and the father is 4 years more than four times the child's age. Find the father's present age.

- (A) 48
  - (B) 36
  - (C) 38
  - (D) 40
  - (E) None of these
- 

Arav and Veer invest in the ratio 4 : 5. After four months, Kunal joins with three times Veer's investment for the remaining eight months. If the total profit at the end of the year is Rs. 4560, find Arav's share.

- (A) Rs. 640
  - (B) Rs. 780
  - (C) Rs. 960
  - (D) Rs. 920
  - (E) None of these
- 

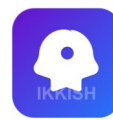
Nisha spends 20% of her monthly salary on groceries, then 15% of what remains on rent, and 40% of the next remainder on education. If she invests the remaining Rs. 6120 in a fixed deposit, find Nisha's monthly salary.

- (A) Rs. 10,000
  - (B) Rs. 12,000
  - (C) Rs. 15,000
  - (D) Rs. 18,000
  - (E) None of these
- 

There are 210 boys and 90 girls in a class, and the number of failed boys equals the number of failed girls. If the number of passed boys is 150% more than the number of passed girls, find the total number of students who passed.

- (A) 160
  - (B) 190
  - (C) 200
  - (D) 180
  - (E) None of these
- 

The breadth of a rectangle is 60 cm, and its area is  $1380 \text{ cm}^2$ . If the base of a right triangle is equal to the rectangle's length and the triangle's height is 20 cm, find the area of the right triangle.



- (A)  $275 \text{ cm}^2$
  - (B)  $230 \text{ cm}^2$
  - (C)  $240 \text{ cm}^2$
  - (D)  $175 \text{ cm}^2$
  - (E) None of these
- 

Eighty percent of a number  $x$  plus forty percent of another number  $y$  totals 440. If the sum of  $x$  and  $y$  is 800, find  $x$ .

- (A) 250
  - (B) 300
  - (C) 350
  - (D) 400
  - (E) None of these
- 

An article is marked 25% above its cost price and then sold at a 10% discount. If the profit on the article is Rs 150, what will be its selling price if it is sold at a 15% profit instead?

- (A) 1240
  - (B) 1380
  - (C) 1400
  - (D) 1420
  - (E) None of these
- 

A boat covers  $1.5D$  kilometers upstream in thrice the time it takes to cover  $D$  kilometers downstream. If the difference between its downstream and upstream speeds is 6 km/h, find the boat's speed in still water.

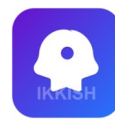
- (A) 6 km/hr
  - (B) 10 km/hr
  - (C) 8 km/hr
  - (D) 9 km/hr
  - (E) None of these
- 

Anita's present age is  $\frac{3}{4}$  of Bharat's present age, and after 4 years Bharat's age will be twice Chitra's present age. If the sum of the current ages of all three of them is 38 years, find Anita's present age.

- (A) 10 years
  - (B) 12 years
  - (C) 14 years
  - (D) 16 years
  - (E) None of these
- 

Train P is 180 meters in length and Train Q is 120 meters in length. They travel in opposite directions and cross each other in 15 seconds. If their speeds are in the ratio 4 : 3, how many seconds will they take to cross each other when moving in the same direction?

- (A) 75
- (B) 90
- (C) 105



- (D) 120
  - (E) None of these
- 

A train takes 6 hours from Station A to B, while another train takes 4 hours from B to A. The first train leaves A at 6 am, and the second leaves B at 7 am. At what time do they meet?

- (A) 8 am
  - (B) 8:30 am
  - (C) 9 am
  - (D) 9:30 am
  - (E) None of these
- 

X, Y, and Z have an average of 80 marks in an exam, and the average of X and Z is 85. If Y's marks are 70 and W's marks are 20% more than Y's, find the average of all four.

- (A) 78
  - (B) 75
  - (C) 84
  - (D) 81
  - (E) None of these
- 

Train P passes a 360 m long Train Q in 20 sec when moving in opposite directions, and in 60 sec when moving in the same direction (speed of P < speed of Q). If Q runs at 72 km/h, find the length of Train P (in m).

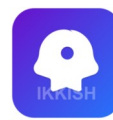
- (A) 300 m
  - (B) 180 m
  - (C) 240 m
  - (D) 280 m
  - (E) None of these
- 

A rectangular plot has width W metres and length  $(W + 12)$  metres. Its area is  $448 \text{ m}^2$ . A square has side equal to the rectangle's width. What is the square's perimeter?

- (A) 72 m
  - (B) 64 m
  - (C) 52 m
  - (D) 56 m
  - (E) None of these
- 

Vikram invests a sum at 6% per annum for T years and earns simple interest of ₹1800. This interest is exactly half of what he would earn at 9% per annum for  $(T + 2)$  years on the same sum. Find the principal.

- (A) ₹4800
  - (B) ₹5000
  - (C) ₹5400
  - (D) ₹6000
  - (E) None of these
-



A container has a mixture with milk at 25%. After adding 20 liters of pure milk, the mixture becomes half milk and half water. What was the initial quantity of water?

- (A) 36 liters
  - (B) 30 liters
  - (C) 48 liters
  - (D) 54 liters
  - (E) None of these
- 

In a class, 70% of the students are boys. Exactly half of the boys attend a seminar, and in total 41% of the class attends. What percentage of the girls attend?

- (A) 15
  - (B) 20
  - (C) 25
  - (D) 30
  - (E) None of these
- 

A and B together can complete a task in 12 days. A alone needs 7 days fewer than B alone. If C works 40% faster than B, how many days will C take to do the task alone?

- (A) 18
  - (B) 20
  - (C) 24
  - (D) 28
  - (E) None of these
- 

Four years ago, the ratio of Rohit's age to Mohit's age was 2 : 5. Ten years from now, their total age will be 98 years. How old was Rohit three years ago?

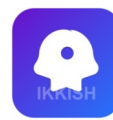
- (A) 18 years
  - (B) 19 years
  - (C) 20 years
  - (D) 21 years
  - (E) None of these
- 

Two inlet pipes A and B can fill a cistern in 24 min and 36 min, while an outlet pipe C empties it in 18 min. Starting in empty tank, the pipes are opened one minute each in the order A, then B, then C, and this sequence repeats. In how many minutes will the cistern be full?

- (A) 203
  - (B) 205
  - (C) 211
  - (D) 216
  - (E) None of these
- 

The speeds of a boat in still water and the stream are in the ratio 5 : 1. The boat covers 48 km upstream and 48 km downstream. The upstream trip takes 2 hours longer than the downstream trip. What is the stream speed (km/h)?

- (A) 2



- (B) 3
  - (C) 4
  - (D) 5
  - (E) None of these
- 

Vikas invests two equal sums. One earns simple interest at 15% per annum for 3 years, and the other at 8% per annum for 4 years. If the difference in interest between the two is Rs. 6,500, find each principal.

- (A) Rs. 40,000
  - (B) Rs. 45,000
  - (C) Rs. 50,000
  - (D) Rs. 52,000
  - (E) None of these
- 

A 135-liter mixture of milk and water is in the ratio 2 : 1. If 45 liters of the mixture are removed and replaced with water, and this process is done twice, how many liters of milk remain at the end?

- (A) 36 liters
  - (B) 40 liters
  - (C) 42 liters
  - (D) 48 liters
  - (E) None of these
- 

Ravi sells an item to Deepak at a profit of 25% on Ravi's selling price. Deepak then sells it at a 20% loss for Rs. 960. Find the difference between Ravi's cost price and the price Deepak paid.

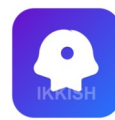
- (A) Rs. 200
  - (B) Rs. 240
  - (C) Rs. 300
  - (D) Rs. 360
  - (E) None of these
- 

The circumference of a circle is 88 cm. A cylinder has radius equal to three-fourths of the circle's diameter, and height 12 cm. What is the cylinder's volume (in  $\text{cm}^3$ )?

- (A) 18480
  - (B) 16632
  - (C) 20160
  - (D) 15288
  - (E) None of these
- 

Kunal can finish a job in 75 days. Meera is 25% less efficient than Kunal. Arjun alone can finish the same job in 100 days. They work one after another in the order Kunal, then Meera, then Arjun, repeating this cycle. In how many days is the work completed?

- (A) 84
- (B) 81
- (C) 96



- (D) 108
  - (E) None of these
- 

A train running at 54 km/h meets a man jogging toward it at 9 km/h and passes him completely in 16 seconds. Find the length of the train in meters.

- (A) 240 m
  - (B) 280 m
  - (C) 320 m
  - (D) 360 m
  - (E) None of these
- 

A total of Rs. 24,000 is split: part at simple interest of 10% per annum for 2 years, and the rest at compound interest of 12% per annum for 2 years. If the amount on compound interest exceeds the amount on simple interest by Rs. 1,880, how much was invested at compound interest?

- (A) 11000
  - (B) 12000
  - (C) 12500
  - (D) 13000
  - (E) None of these
- 

A box contains 3 red, 4 green, and 2 black balls. Two balls are drawn at random without replacement. What is the probability that exactly one is red?

- (A) 28%
  - (B) 45%
  - (C) 50%
  - (D) 55%
  - (E) None of these
- 

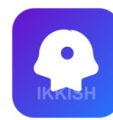
Thirty percent of number 'p' equals eighteen percent of number 'q'. The average of p and q is 50 more than p. Find 80% of q.

- (A) 140
  - (B) 160
  - (C) 180
  - (D) 200
  - (E) None of these
- 

A boat takes 40 minutes to travel a fixed distance upstream and 30 minutes for the same distance in still water. How many minutes will it take for the same distance downstream?

- (A) 14
- (B) 16
- (C) 20
- (D) 24
- (E) None of these





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Rahul can finish a job in 12 days and Sneha in 6 days. They work together for 3 days, then Tapan, whose efficiency is half of Rahul's, completes the remainder alone. How many total days are needed to finish the job?

- (A) 6
  - (B) 8
  - (C) 9
  - (D) 10
  - (E) None of these
- 

A train crosses a 160 m platform in 11 seconds and passes through a tunnel three times its own length in 28 seconds. Find the train's speed (in m/s).

- (A) 36
  - (B) 40
  - (C) 42
  - (D) 48
  - (E) None of these
- 

A dealer marks goods 50% above cost. With a 20% discount he makes a profit of Rs. 500. If instead he offers a 10% discount, what will be his profit?

- (A) Rs. 850
  - (B) Rs. 875
  - (C) Rs. 900
  - (D) Rs. 925
  - (E) None of these
- 

In an election between two candidates, Mehul receives 25% fewer votes than Nisha. If 180 of Nisha's votes go for Mehul, they would have been tied. How many votes were polled in total?

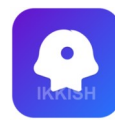
- (A) 2400
  - (B) 2560
  - (C) 2500
  - (D) 2520
  - (E) None of these
- 

Two years from now, the ratio of Nitin's age to Kavya's age four years ago will be 7 : 5. Six years ago, their average age was 19 years. What is Nitin's present age?

- (A) 30 years
  - (B) 24 years
  - (C) 26 years
  - (D) 28 years
  - (E) None of these
- 

A circle of radius 7 cm and a rectangle of length 75 cm together have an area of  $1654 \text{ cm}^2$ . Find the absolute difference between the circle's circumference and the rectangle's perimeter.





- (A) 140 cm
  - (B) 146 cm
  - (C) 150 cm
  - (D) 156 cm
  - (E) None of these
- 

Arjun and Bharat invest Rs. 3000 and Rs. 1500, respectively. After 6 months, Charu joins with Rs. 2000. If Charu's share of profit at year-end is Rs. 400, find the difference between Arjun's and Bharat's profit shares.

- (A) Rs. 500
  - (B) Rs. 550
  - (C) Rs. 600
  - (D) Rs. 650
  - (E) None of these
- 

Eight members have an average weight of  $Y$  kg. Two newcomers join with a combined weight of 170 kg, and the overall average increases by 3 kg. If one of the newcomers weighs  $(Y + 5)$  kg, what is the difference between their weights?

- (A) 12 kg
  - (B) 16 kg
  - (C) 30 kg
  - (D) 24 kg
  - (E) None of these
- 

Riya scores 48% in an exam and is 50 marks short of the cutoff. Karan scores 68% and is 30 marks above the cutoff. If Mehul scores 60%, what is the difference between Mehul's and Riya's marks?

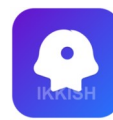
- (A) 40
  - (B) 48
  - (C) 52
  - (D) 60
  - (E) None of these
- 

Rahul invests Rs.  $P$  at 10% compounded annually for two years and  $(P + 400)$  at 10% simple interest for two years. If his simple interest exceeds his compound interest by Rs. 60, find the amount placed in the simple interest scheme.

- (A) Rs. 2000
  - (B) Rs. 2400
  - (C) Rs. 2800
  - (D) Rs. 3200
  - (E) None of these
- 

A can contains  $y$  liters of milk and 15 liters of water. After adding 7 liters of milk and 5 liters of water, milk becomes  $\frac{3}{5}$  of the mixture. Then 10 liters of the new mixture is removed. How many liters remain in the can?

- (A) 40
- (B) 50



- (C) 30
  - (D) 20
  - (E) None of these
- 

Boat P's speed in still water is twice the stream's speed. It takes 5 hours to cover 30 km upstream. Boat Q's still water speed is 3 km/h more than P's downstream speed. How many minutes will Q take to go 30 km upstream?

- (A) 90
  - (B) 105
  - (C) 120
  - (D) 150
  - (E) None of these
- 

The average age of Aman, Bhavya, and Chirag is 18 years. Four years later, the average age of Bhavya, Chirag, and Divya will be 20 years. If Aman's and Divya's present ages sum to 54 years, what will be Divya's age after 5 years?

- (A) 29 years
  - (B) 30 years
  - (C) 31 years
  - (D) 32 years
  - (E) None of these
- 

A vendor buys 200 kg of guavas at Rs. 18 per kg. During transport, 10% spoil and are thrown away. He sells half of the good guavas at Rs. 24 per kg. At what price per kg should he sell the rest to make an overall 25% profit?

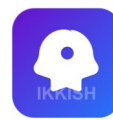
- (A) Rs. 18
  - (B) Rs. 20
  - (C) Rs. 26
  - (D) Rs. 28
  - (E) None of these
- 

Forty women working 9 hours daily for 8 days complete 1152 units. If a man works at three fourths the efficiency of a woman, how many men working 8 hours daily for 12 days are needed to finish 1728 units?

- (A) 48
  - (B) 54
  - (C) 50
  - (D) 60
  - (E) None of these
- 

In a school, there are 240 boys and 150 girls. The number of boys who fail equals the number of girls who fail. If the number of boys who pass is 125% more than the number of girls who pass, how many students pass in total?

- (A) 216
- (B) 234
- (C) 240
- (D) 256
- (E) None of these



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A rectangle has width 46 cm and area  $1150 \text{ cm}^2$ . A right triangle takes the rectangle's length as its base and has height 28 cm. What is the area of the triangle?

- (A)  $300 \text{ cm}^2$
  - (B)  $320 \text{ cm}^2$
  - (C)  $350 \text{ cm}^2$
  - (D)  $380 \text{ cm}^2$
  - (E) None of these
- 

Priya and Tanmay can finish a job together in 16 days. The time Priya needs to complete 80% of the job equals the time Tanmay needs to complete 60% of it. How many days will Priya take to complete 25% of the job working alone?

- (A) 5
  - (B) 6
  - (C) 8
  - (D) 9
  - (E) None of these
- 

Pooja's present age is five-sixths of Ravi's. Three years from now, Ravi will be three times Meera's current age. If the sum of their present ages is 66 years, how old is Pooja now?

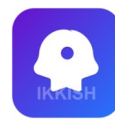
- (A) 20 years
  - (B) 25 years
  - (C) 24 years
  - (D) 30 years
  - (E) None of these
- 

Train P needs 9 hours from A to B, while Train Q needs 3 hours from B to A. P leaves A at 6 am, Q leaves B at 7 am. After how many hours from Q's departure do they meet?

- (A) 1
  - (B) 2
  - (C) 3
  - (D) 4
  - (E) None of these
- 

X, Y and Z have an average score of 76. The average of X and Z is 82. W scores 25% more than Y. What is the average of X, Y, Z and W?

- (A) 75
  - (B) 76
  - (C) 77
  - (D) 78
  - (E) None of these
-



Eight men can complete a job in 30 days, and twelve women can complete the same job in 40 days. In how many days will 5 men and 10 women together finish the work?

- (A) 18
  - (B) 20
  - (C) 22
  - (D) 24
  - (E) None of these
- 

A car covers a fixed distance in 7 hours at 70 km/h. By what percent must its speed be increased to cover the same distance in 5 hours?

- (A) 25
  - (B) 30
  - (C) 35
  - (D) 40
  - (E) None of these
- 

P and Q invest together ₹28,000 in a firm. After 5 months, Q pulls out ₹3,000 from his capital. At year end, the total profit is ₹30,000 and Q's share is ₹12,000. What is Q's capital immediately after the withdrawal (i.e., at the 5-month point)?

- (A) ₹9,000
  - (B) ₹9,250
  - (C) ₹9,500
  - (D) ₹9,750
  - (E) None of these
- 

The length of a rectangle is increased by 25% while the breadth is unchanged, and the area goes up by 88 m<sup>2</sup>. If the original perimeter was 76 m, what is the breadth?

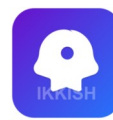
- (A) 14 m
  - (B) 15 m
  - (C) 16 m
  - (D) 18 m
  - (E) None of these
- 

Aman works twice as efficiently as Bharat and finishes the job 36 days earlier than Bharat. In how many days can they together finish half of the job?

- (A) 12
  - (B) 20
  - (C) 18
  - (D) 24
  - (E) None of these
- 

A shopkeeper sells part of 84 kg of sugar at a 5% profit and the rest at a 15% profit. If his overall profit is 10%, how many kilograms were sold at 5% profit?

- (A) 32 kg



- (B) 40 kg
  - (C) 42 kg
  - (D) 45 kg
  - (E) None of these
- 

When Isha was born, her father was twice the age of her sister, and her mother was 20 years older than the sister. If Isha is now 14 and the current average age of the four (father, mother, sister, Isha) is 38, find the mother's present age.

- (A) 42 years
  - (B) 45 years
  - (C) 50 years
  - (D) 53 years
  - (E) None of these
- 

The difference between the interest earned at 15% p.a. simple interest for 2 years and the interest earned at 10% p.a. for 1 year compounded half yearly is ₹3,950. Find the principal.

- (A) ₹18,000
  - (B) ₹20,000
  - (C) ₹15,000
  - (D) ₹24,000
  - (E) None of these
- 

Arjun and Karan earn in the ratio 7 : 5, while their monthly spending stands in the ratio 3 : 2. If both save Rs. 2800 each, what is Arjun's monthly income?

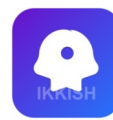
- (A) Rs. 16,800
  - (B) Rs. 18,200
  - (C) Rs. 19,600
  - (D) Rs. 21,000
  - (E) None of these
- 

Ayaan has Rs. 1, 50 paise, and 25 paise coins in the ratio 9 : 8 : 7. If the total value is Rs. 177, how many 25 paise coins does he have?

- (A) 72
  - (B) 80
  - (C) 84
  - (D) 88
  - (E) None of these
- 

A guardian divides Rs. 23,000 among two sons, three daughters, and four nieces. Each son gets five times a niece's share; each daughter gets three times a niece's share. What does each daughter receive?

- (A) Rs. 2,500
- (B) Rs. 2,800
- (C) Rs. 3,000



- (D) Rs. 3,600
  - (E) None of these
- 

A storage tank holds Green and Orange liquids mixed overall in the ratio 7 : 5. In the lower half, the mix is 5 : 3. If the tank's total capacity is 96 liters, how many liters of Green are in the upper half?

- (A) 20
  - (B) 24
  - (C) 26
  - (D) 30
  - (E) None of these
- 

The average of 'P', 'P + 8', and 'P + Q' is 48, while the average of 'P' and 'Q' is 36. 'P' is what percent of 'Q'?

- (A) 83.33
  - (B) 75
  - (C) 80
  - (D) 90
  - (E) None of these
- 

The mean salary of Asha and Bhavesh is 140% of the mean of Asha and Chitra. If Bhavesh earns 300% of Chitra's pay, Asha's salary is what percent of Chitra's?

- (A) 333.33
  - (B) 250
  - (C) 300
  - (D) 400
  - (E) None of these
- 

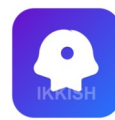
A hostel has 90 students. When 30 more join, the daily mess cost rises by Rs. 480, while the per-student cost falls by Rs. 4. What was the original daily expense?

- (A) Rs. 2,760
  - (B) Rs. 2,880
  - (C) Rs. 3,000
  - (D) Rs. 3,240
  - (E) None of these
- 

Riya, Tarun, and Neha are aged ' $n - 10$ ', ' $n + 8$ ', and ' $n + 20$ '. If Riya's age to Tarun's is 4 : 7, how old is Neha now?

- (A) 45 years
  - (B) 48 years
  - (C) 54 years
  - (D) 60 years
  - (E) None of these
- 

't' years ago, Naresh was six times as old as Deepak. After '3t' years, Naresh will be exactly twice Deepak's age. If  $t = 5$ , what is Naresh's current age (in years)?



- (A) 24
  - (B) 28
  - (C) 30
  - (D) 35
  - (E) None of these
- 

A gadget is marked 50% above cost and sold at a 30% discount on the marked price, giving a profit of Rs. 95. If instead it were sold at a 15% profit on cost, what would be the profit (in Rs.)?

- (A) Rs. 255
  - (B) Rs. 225
  - (C) Rs. 285
  - (D) Rs. 300
  - (E) None of these
- 

A 90 liter mixture has milk and water in the ratio  $m : n$ . Thirty percent is removed, then 21 liters of water are added. The final milk to water ratio becomes  $5 : 7$ . What was the original quantity of milk (in liters)?

- (A) 36
  - (B) 45
  - (C) 50
  - (D) 65
  - (E) None of these
- 

: A dealer has 200 kg of grain. Part is sold at 12% profit and the rest at 24% profit. The overall profit is 21%. By how many kilograms does the quantity sold at 12% profit differ from the quantity sold at 24% profit?

- (A) 80 kg
  - (B) 90 kg
  - (C) 100 kg
  - (D) 110 kg
  - (E) None of these
- 

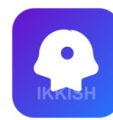
A rectangle is cut into two equal rectangles by a cut parallel to its width. The perimeter of each small rectangle is 14 cm less than the original. If the original perimeter was 84 cm, find its area.

- (A)  $384 \text{ cm}^2$
  - (B)  $392 \text{ cm}^2$
  - (C)  $420 \text{ cm}^2$
  - (D)  $448 \text{ cm}^2$
  - (E) None of these
- 

A right triangle has base 8 m and hypotenuse 17 m. What is its area?

- (A)  $48 \text{ m}^2$
- (B)  $56 \text{ m}^2$
- (C)  $60 \text{ m}^2$
- (D)  $64 \text{ m}^2$
- (E) None of these





-----  
Priya has 20 cards numbered 1 to 20 in a pouch. She draws one card at random. What is the probability that the number is composite?

- (A)  $\frac{9}{10}$
  - (B)  $\frac{1}{2}$
  - (C)  $\frac{11}{20}$
  - (D)  $\frac{3}{5}$
  - (E) None of these
- 

Riya started a business with Rs. Y. After 9 months, Kavya joined with Rs. (Y + 18,000). At year-end, Riya's share of profit is Rs. 4,200 and Kavya's is Rs. 2,100. Find Y.

- (A) 12,000
  - (B) 15,000
  - (C) 18,000
  - (D) 20,000
  - (E) None of these
- 

A train covers 420 km at 70 km/h if it makes no stops, and 420 km at 42 km/h including stoppages. How many hours are spent in stoppages in total?

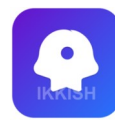
- (A) 2
  - (B) 3
  - (C) 4
  - (D) 5
  - (E) None of these
- 

An item is marked '10x%' above its cost price. There is no profit or loss if it is sold at a '5x%' discount. Find the value of 'x'.

- (A) 6
  - (B) 8
  - (C) 10
  - (D) 12
  - (E) None of these
- 

Sameer, Nitin, and Pawan invested in the ratio 3 : 5 : 2. After 8 months, Sameer reduced his capital by one-third and Nitin increased his by 60%; Pawan stayed the same. At year-end, the difference between Nitin's and Pawan's profit shares is what percent of Sameer's share?

- (A) 125
  - (B) 150
  - (C) 175
  - (D) 200
  - (E) None of these
-



From a standard deck of 52 cards, what is the probability that a randomly drawn card is a heart?

- (A) 20%
  - (B) 25%
  - (C) 30%
  - (D) 35%
  - (E) None of these
- 

A sum becomes 25 times itself in 2 years when compounded annually. What is the annual rate of interest?

- (A) 250%
  - (B) 300%
  - (C) 400%
  - (D) 500%
  - (E) None of these
- 

At a certain simple interest rate, a sum becomes  $(3m + 25)\%$  of itself in 5 years and  $(4m + 16)\%$  in 8 years. What is the percentage increase in 2 years?

- (A) 18
  - (B) 20
  - (C) 24
  - (D) 28
  - (E) None of these
- 

Kunal leaves Town A at 5:00 pm for Town B. Suresh leaves Town B at 7:00 pm for Town A. Each would take 8 hours to cover the whole route alone. How many minutes after 7:00 pm will they meet?

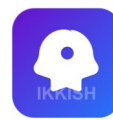
- (A) 125
  - (B) 150
  - (C) 120
  - (D) 180
  - (E) None of these
- 

Ravi and Meera start from opposite ends at the same time and meet en route. After meeting, Ravi needs 9 minutes to reach Meera's start, while Meera needs 25 minutes to reach Ravi's start. How many minutes does Ravi take for the entire journey?

- (A) 20
  - (B) 22
  - (C) 24
  - (D) 26
  - (E) None of these
- 

A boat's downstream speed exceeds its upstream speed by 12 km/h. If its still- water speed is 16 km/h, what percent of the time needed to travel 40 km upstream is the time needed to travel 44 km downstream?

- (A) 40
- (B) 45
- (C) 50



- (D) 55  
(E) None of these
- 

A train clears a bridge that is twice its own length in 36 seconds. It also passes a man running toward it at 18 km/h in 9 seconds. What is the length of the bridge (in m)?

- (A) 280 m  
(B) 300 m  
(C) 320 m  
(D) 360 m  
(E) None of these
- 

The combined selling price of 18 pencils and 18 pens is Rs. 360. After reducing each pencil's price by 20% and increasing each pen's price by 20%, the selling price of 9 pencils and 9 pens together becomes Rs. 180. What is the selling price (in Rs.) of one pen?

- (A) Rs. 8  
(B) Rs. 10  
(C) Rs. 12  
(D) Rs. 14  
(E) None of these
- 

Kiran and Mohan can finish a job in X days. Kiran alone would take 1.80X days. Kiran works alone for X days, Kiran stops. How many more days must Mohan work alone to finish the job?

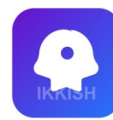
- (A) 0.80X  
(B) X  
(C) 1.20X  
(D) 1.25X  
(E) None of these
- 

A bike moving at 45 km/h covers 90 km. If its speed increases by 20% after 30 minutes, how much less time (in minutes) will it take to cover the same distance?

- (A) 84  
(B) 90  
(C) 96  
(D) 100  
(E) None of these
- 

An article is sold after two successive discounts of 20% and 25% at a loss of Rs. 108. If the article had been sold for a single discount of 10% the profit would have been Rs. 108. Find the original selling price of the article.

- (A) Rs. 380  
(B) Rs. 456  
(C) Rs. 432  
(D) Rs. 420  
(E) None of these



-----  
City M starts with 120,000 people. Each year it grows by 3% and then a fixed 1,200 people move in. Find the population after 2 years.

- (A) 127,200
  - (B) 128,544
  - (C) 129,744
  - (D) 130,200
  - (E) None of these
- 

A bag contains  $x$  red balls and 5 blue balls. Two balls are drawn at random without replacement. If the probability that both are red is  $\frac{3}{7}$ , find  $x$ .

- (A) 18
  - (B) 15
  - (C) 12
  - (D) 10
  - (E) None of these
- 

A fair coin is tossed 5 times, find the probability of not getting more than 1 heads.

- (A)  $\frac{5}{16}$
  - (B)  $\frac{1}{4}$
  - (C)  $\frac{9}{32}$
  - (D)  $\frac{3}{16}$
  - (E) None of these
- 

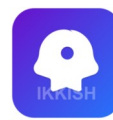
A shopkeeper sold 18 kg of rice and after giving 1 kg rice free, he made an 8% profit. How much profit he would make without the free rice?

- (A) 17.50
  - (B) 16.67
  - (C) 14
  - (D) 12.50
  - (E) None of these
- 

Neha spends 25% of her income on rent and 20% of the remaining on food. On EMIs she spends an amount equal to 30% of her income and saves the rest of her income. If her savings exceed her food expense by Rs. 6000, find her monthly income (in Rs.).

- (A) 30000
  - (B) 36000
  - (C) 40000
  - (D) 45000
  - (E) None of these
- 

Priya drives to her office at 30 km/h and arrives 18 minutes late. At 45 km/h, she gets there 12 minutes early. What is the distance?



- (A) 36 km
  - (B) 40 km
  - (C) 42 km
  - (D) 45 km
  - (E) None of these
- 

Pipes A and B together can fill a tank in 72 hours. As pipe B developed a blockage it worked with 75% of its efficiency and the tank became full in 80 hours. In how many hours can pipe A alone fill that tank.

- (A) 100
  - (B) 96
  - (C) 120
  - (D) 108
  - (E) None of these
- 

In an election, 20% of the votes were invalid. Of the valid votes, candidates A and B received votes in the ratio 9 : 7. If A won by 300 votes, find the total number of votes polled.

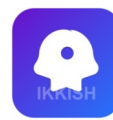
- (A) 4000
  - (B) 2700
  - (C) 3500
  - (D) 3000
  - (E) None of these
- 

In an AP, the 5th term is 18 and the 12th term is 39. Find the 25th term.

- (A) 82
  - (B) 78
  - (C) 68
  - (D) 84
  - (E) None of these
- 

Thank you

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# Speed Math Calculation

For BANking, SSC and  
Railway Exam Aspirant



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