# SBI CLERK MAINS 2024-25

# D.I. MARATHON

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There are 10 bus routes in a city. The routes are numbered 1 to 10. Each odd-numbered route has 6 buses, and each even-numbered route has 5 buses. There is a diesel tank, which is connected to each route, in the city. Every bus uses 120 liters of diesel daily in 24 hours.
On a particular day, there was no bus in Route number 1 and Route number 2, and in the rest of the routes, each bus was present. On that day, the tank was being emptied exactly two times.
(Given: Assume that the tank is being emptied every minute at the same rate. One day = 24 hours.)

एक शहर में 10 बस मार्ग हैं। इन मार्गों को 1 से 10 तक क्रमांकित किया गया है। प्रत्येक विषम क्रमांक वाले मार्ग में 6 बसें हैं, और प्रत्येक सम क्रमांक वाले मार्ग में 5 बसें हैं। शहर में एक डीजल टैंक है, जो प्रत्येक मार्ग से जुड़ा हुआ है। प्रत्येक बस प्रतिदिन 120 लीटर डीजल का उपयोग करती है। एक दिन, मार्ग 1 और मार्ग 2 पर कोई बस नहीं थी, और बाकी मार्गों पर प्रत्येक बस मौजूद थी। उस दिन, टैंक को ठीक दो बार खाली किया गया।
(दिया गया: मान लें कि टैंक हर मिनट समान दर से खाली होता है। एक दिन = 24 घंटे।)

There are 10 bus routes in a city. The routes are numbered 1 to 10. Each odd-numbered route has 6 buses, and each even-numbered route has 5 buses. There is a diesel tank, which is connected to each route, in the city. Every bus uses 120 liters of diesel daily in 24 hours.

On a particular day, there was no bus in Route number 1 and Route number 2, and in the rest of the routes, each bus was present. On that day, the tank was being emptied exactly two times.

(Given: Assume that the tank is being emptied every minute at the same rate. One day = 24 hours.)

On a particular day when all the buses of the city were present, 1 extra bus came to each route. On that day, the tank was filled three times. What was the average daily diesel usage of each new bus?

एक दिन जब शहर की सभी बसें उपस्थित थीं, प्रत्येक मार्ग में 1 अतिरिक्त बस आ गई। उस दिन टैंक को तीन बार भरा गया। नई बसों की प्रति दिन औसत डीजल खपत क्या थी?

(A) 99 liters
(B) 110 liters
(C) 121 liters
(D) 132 liters
(E) None of these

On a particular day when all the buses of the city were present, 1 extra bus came to each route. On that day, the tank was filled three times. What was the average daily diesel usage of each new bus?

(A) 99 liters
(B) 110 liters
(C) 121 liters
(D) 132 liters
(E) None of these

If there is no bus in odd-numbered routes and all the buses of even-numbered routes are present, in how many hours the diesel of the tank will be emptied?

यदि विषम क्रमांक वाले मार्गों पर कोई बस नहीं है और सभी सम क्रमांक वाले मार्गों की बसें उपस्थित हैं, तो टैंक कितने घंटे में खाली हो जाएगा?

(A) 20
(B) 21.12
(C) 22.50
(D) 24
(E) None of these

If there is no bus in odd-numbered routes and all the buses of even-numbered routes are present, in how many hours the diesel of the tank will be emptied?

(A) 20
(B) 21.12
(C) 22.50
(D) 24
(E) None of these

The city transport department added 4 new routes, and in each new route, 8 buses run. They installed one more tank and connected it with the old tank so that both tanks get filled at the same time and get emptied at the same time. If the diesel of both tanks lasts for 16 hours (all the buses are present), what is the capacity of the new tank?
(Given: The average per-hour diesel usage of the buses in the new routes is the same as the per-hour usage of each old bus.)

शहर परिवहन विभाग ने 4 नए मार्ग जोड़े हैं, और प्रत्येक नए मार्ग में 8 बसें चलती हैं। उन्होंने एक और टैंक जोड़ा और इसे पुराने टैंक से जोड़ा ताकि दोनों टैंक एक ही समय में भरें और खाली हों। यदि दोनों टैंकों का डीजल 16 घंटे तक चलता है, तो नए टैंक की क्षमता क्या है?
(दिया गया: नए मार्गों में बसों की प्रति घंटे औसत डीजल खपत पुराने मार्गों की प्रत्येक बस के प्रति घंटे डीजल खपत के समान है।)

(A) 3600 liters
(B) 3750 liters
(C) 4320 liters
(D) 4400 liters
(E) None of these

The city transport department added 4 new routes, and in each new route, 8 buses run. They installed one more tank and connected it with the old tank so that both tanks get filled at the same time and get emptied at the same time. If the diesel of both tanks lasts for 16 hours (all the buses are present), what is the capacity of the new tank?
(Given: The average per-hour diesel usage of the buses in the new routes is the same as the per-hour usage of each old bus.)

(A) 3600 liters
(B) 3750 liters
(C) 4320 liters
(D) 4400 liters
(E) None of these

If there was only Route number 1 in the city, the diesel of the tank would last for P days. If there was only Route number 10 in the city, the diesel of the tank will last for Q days. What is the value of Q – P?

यदि शहर में केवल मार्ग 1 होता, तो टैंक का डीजल P दिनों तक चलता। यदि शहर में केवल मार्ग 10 होता, तो टैंक का डीजल Q दिनों तक चलता। Q – P का मान क्या है?

(A) 7/10
(B) 7/11
(C) 7/12
(D) 7/15
(E) None of these

If there was only Route number 1 in the city, the diesel of the tank would last for P days. If there was only Route number 10 in the city, the diesel of the tank will last for Q days. What is the value of Q – P?

(A) 7/10
(B) 7/11
(C) 7/12
(D) 7/15
(E) None of these

A and B are the roots of the equation $x^2 - (5P + 8)x + 10P^2 = 0$ such that the HCF of A and B is 'P'.

It is known that both A and B are integers and the value of P is a natural number greater than 1. (A < B)

A और B समीकरण $x^2 - (5P + 8)x + 10P^2 = 0$ के मूल हैं जैसे कि A और B का HCF 'P' है।
यह ज्ञात है कि A और B दोनों पूर्णांक हैं और P का मान 1 से अधिक एक प्राकृतिक संख्या है। (A < B)

A and B are the roots of the equation $x^2 - (5P + 8)x + 10P^2 = 0$ such that the HCF of A and B is ‘P’.

It is known that both A and B are integers and the value of P is a natural number greater than 1. (A < B)

If the larger root of equation $y^2 - (P - 2)y - R = 0$ is equal to the average of the roots of the given equation, what percentage of 'R' is 96?

यदि समीकरण $y^2 - (P - 2)y - R = 0$ का बड़ा मूल समीकरण के मूलों के औसत के बराबर है, तो 'R' का कितना प्रतिशत 96 है?

A. 37.50

B. 42.85

C. 54.54

D. 57.14

E. None of these

If the larger root of equation $y^2 - (P - 2)y - R = 0$ is equal to the average of the roots of the given equation, what percentage of 'R' is 96?

A. 37.50

B. 42.85

C. 54.54

D. 57.14

E. None of these

The roots of which of the following equations are 10 less than the roots of the given equation?

निम्नलिखित में से किस समीकरण के मूल दिए गए समीकरण के मूलों से 10 कम हैं?

A. $y^2 - 9y + 36 = 0$

B. $y^2 - 16y + 48 = 0$

C. $y^2 - 8y - 20 = 0$

D. $y^2 - 121 = 0$

E. None of these

The roots of which of the following equations are 10 less than the roots of the given equation?

A. $y^2 - 9y + 36 = 0$

B. $y^2 - 16y + 48 = 0$

C. $y^2 - 8y - 20 = 0$

D. $y^2 - 121 = 0$

E. None of these

If ‘P + 2’ is the HCF of 180 and ‘B’, (B < 100), what is the greatest possible value of B?

यदि ‘P + 2’ संख्या 180 और ‘B’ (B < 100) का महत्तम समापवर्तक (HCF) है, तो B का अधिकतम संभव मान क्या है?

A. 42

B. 66

C. 92

D. 78

E. None of these

If ‘P + 2’ is the HCF of 180 and ‘B’, (B < 100), what is the greatest possible value of B?

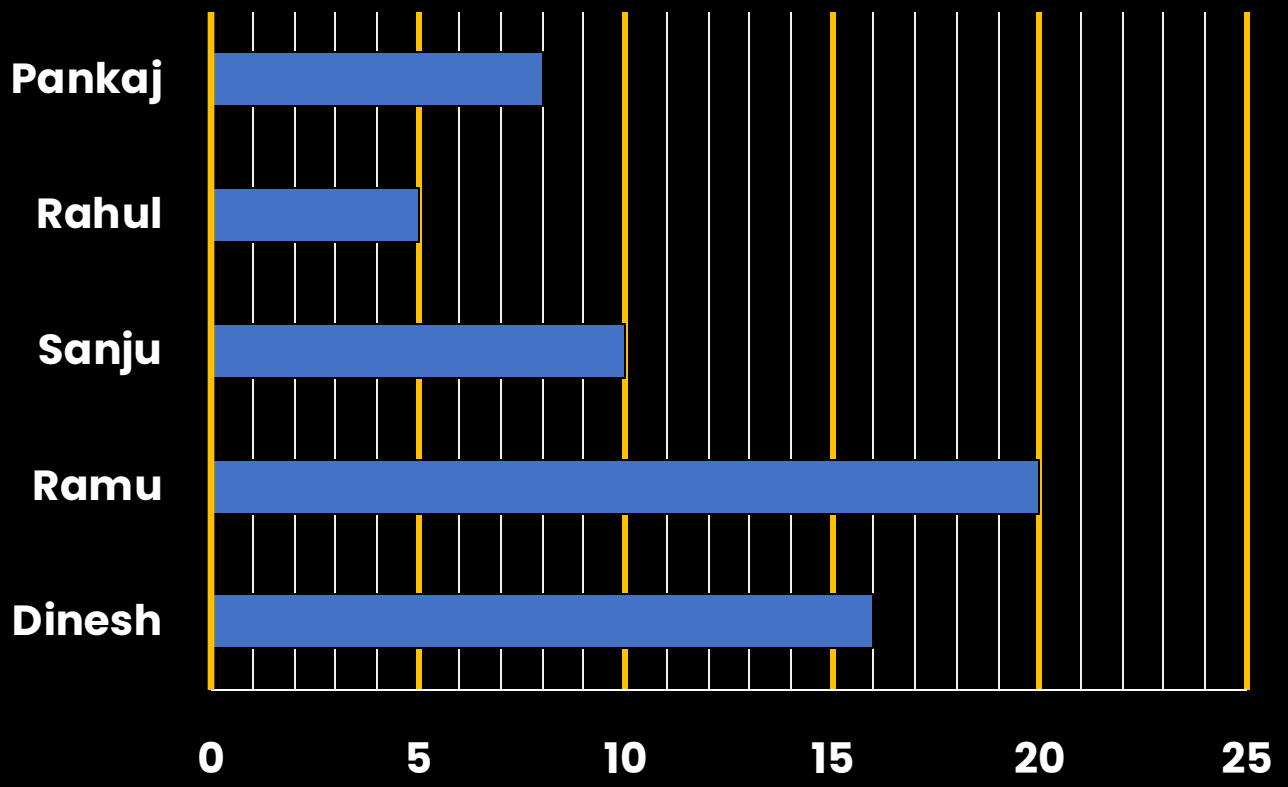
A. 42

B. 66

C. 92

D. 78

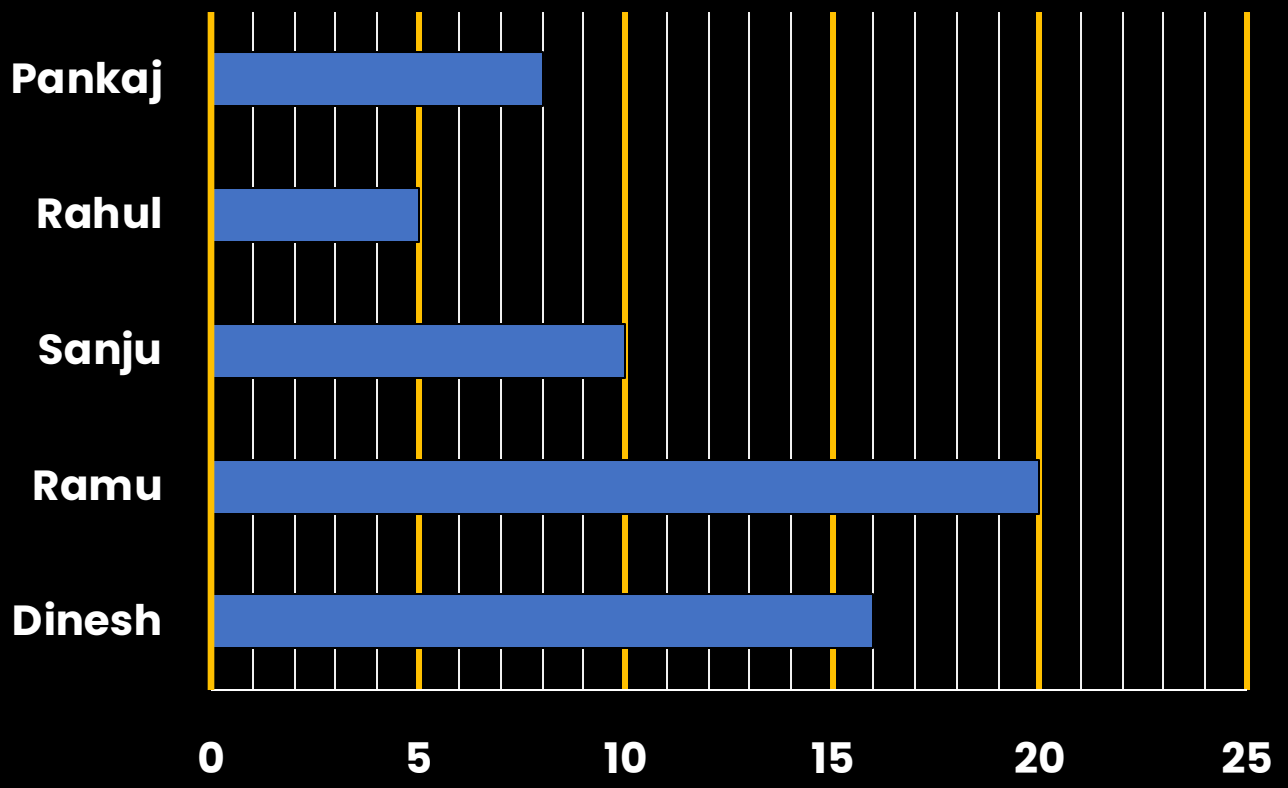
E. None of these




A, B, and C lie on a straight line, with B between A and C.
A, B, और C एक सीधी रेखा पर स्थित हैं, जिसमें B, A और C के बीच में है।

5 people Dinesh, Ramu, Sanju, Rahul and Pankaj travel from cities A to B (at their usual speeds) and after that from B to C. The speed of each one of them from B to C was 50% more the speed from A to B. The distance from A to B is 57.14% of the distance from A to C.
5 लोग - दिनेश, रामू, संजू, राहुल और पंकज - शहर A से B तक (अपनी सामान्य गति से) यात्रा करते हैं और फिर B से C तक। B से C तक उनकी गति A से B की गति से 50% अधिक थी। A से B की दूरी, A से C की दूरी का 57.14% है।

The bar graph shows the difference between the times (in hrs) taken by each one of them from A to B and from B to C.
नीचे दिए गए बार ग्राफ़ में प्रत्येक व्यक्ति के लिए A से B और B से C के बीच के समय (घंटों में) का अंतर दर्शाया गया है।

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The bar graph shows the difference between the times (in hrs) taken by each one of them from A to B and from B to C.

A, B, and C lie on a straight line, with B between A and C.

At their usual speeds, Ramu starts from City A and Sanju starts from City C. They meet 50 km away from City B. What is the distance between cities A and C?

रामू अपनी सामान्य गति से शहर A से शुरू करता है और संजू शहर C से शुरू करता है। वे शहर B से 50 किमी दूर मिलते हैं। A और C के बीच की दूरी कितनी है?

(A) 150 km
(B) 240 km
(C) 210 km
(D) 300 km
(E) None of these

At their usual speeds, Ramu starts from City A and Sanju starts from City C. They meet 50 km away from City B. What is the distance between cities A and C?

(A) 150 km
(B) 240 km
(C) 210 km
(D) 300 km
(E) None of these

Dinesh and Pankaj start from City A toward City B at their usual speeds, then travel from B back to A, continuously going back and forth between the two cities without stopping. After how many minutes from the start will they meet for the second time along the way?

दिनेश और पंकज A से B की ओर अपनी सामान्य गति से यात्रा शुरू करते हैं, फिर B से वापस A की ओर यात्रा करते हैं और बिना रुके लगातार A और B के बीच आते-जाते रहते हैं। यात्रा शुरू होने के कितने मिनट बाद वे दूसरी बार रास्ते में मिलेंगे?

(A) 36 hours
(B) 37 hours 30 minutes
(C) 42 hours 40 minutes
(D) 45 hours
(E) None of these

Dinesh and Pankaj start from City A toward City B at their usual speeds, then travel from B back to A, continuously going back and forth between the two cities without stopping. After how many minutes from the start will they meet for the second time along the way?

(A) 36 hours
(B) 37 hours 30 minutes
(C) 42 hours 40 minutes
(D) 45 hours
(E) None of these

Had Rahul traveled at his usual speed from A to C, how many hours earlier or later would he have arrived at C?

यदि राहुल A से C तक अपनी सामान्य गति से यात्रा करता, तो वह C पर कितने घंटे पहले या बाद में पहुंचता?

(A) 2.50
(B) 3.33
(C) 5
(D) 7.50
(E) None of these

Had Rahul traveled at his usual speed from A to C, how many hours earlier or later would he have arrived at C?

(A) 2.50
(B) 3.33
(C) 1.67
(D) 7.50
(E) None of these

A solid cylinder is twice as high and half as wide as a hollow cylindrical vessel. The vessel has some water in it and when the solid cylinder is placed inside it, it gets submerged only upto half of its height. The height of the solid cylinder is 48 cm.

एक ठोस बेलन, खोखले बेलनाकार पात्र से दो गुना ऊँचा और आधे व्यास का है। पात्र में थोड़ा पानी है और जब ठोस बेलन इसमें डाला जाता है, तो वह अपनी ऊँचाई के केवल आधे तक डूबता है। ठोस बेलन की ऊँचाई 48 सेमी है।

A solid cylinder is twice as high and half as wide as a hollow cylindrical vessel. The vessel has some water in it and when the solid cylinder is placed inside it, it gets submerged only upto half of its height. The height of the solid cylinder is 48 cm.

What was the initial water level in the vessel?
पात्र में प्रारंभिक जलस्तर क्या था?

A. 12 cm
B. 20 cm
C. 18 cm
D. 15 cm
E. None of these

What was the initial water level in the vessel?

A. 12 cm
B. 20 cm
C. 18 cm
D. 15 cm
E. None of these

If an 8 cm high solid cylindrical log is put inside the vessel, it gets completely submerged in the water and water level remains 1.5 cm below the brim of the vessel. Find the radius of the log if the vessel has a radius of 28 cm.

यदि एक 8 सेमी ऊँचा ठोस बेलनाकार लकड़ी का लट्ठा पात्र में डाला जाता है, तो वह पूरी तरह से पानी में डूब जाता है और जलस्तर पात्र के किनारे से 1.5 सेमी नीचे रहता है। यदि पात्र का व्यास 28 सेमी है, तो लट्ठे का व्यास क्या है?

A. 14 cm
B. 17.50 cm
C. 10.5 cm
D. 21 cm
E. None of these

If an 8 cm high solid cylindrical log is put inside the vessel, it gets completely submerged in the water and water level remains 1.5 cm below the brim of the vessel. Find the radius of the log if the vessel has a radius of 28 cm.

A. 14 cm
B. 17.50 cm
C. 10.5 cm
D. 21 cm
E. None of these

When a solid cuboid of base dimensions 16 cm × 14 cm and a height of 24 cm is placed inside the vessel vertically, with its base touching the bottom of the vessel, the water level in the vessel becomes 22.50 cm. If the cuboid is placed horizontally inside the vessel, the top surface of the cuboid could be how much below the level of the water in the vessel? (Radius of the vessel is more than 20 cm)

जब एक ठोस आयताकार घनाभ, जिसकी आधार की मापें 16 सेमी × 14 सेमी और ऊँचाई 24 सेमी है, पात्र में खड़ा करके डाला जाता है और उसका आधार पात्र के तल को छूता है, तो पात्र में जलस्तर 22.50 सेमी हो जाता है। यदि घनाभ को क्षैतिज रूप से पात्र में रखा जाए, तो पात्र में पानी के स्तर से घनाभ का ऊपरी सतह कितना नीचे हो सकता है? (पात्र का व्यास 20 सेमी से अधिक है।)

A. 4.8 cm
B. 7.2 cm
C. 5.6 cm
D. 5.8 cm
E. None of these

When a solid cuboid of base dimensions 16 cm × 14 cm and a height of 24 cm is placed inside the vessel vertically, with its base touching the bottom of the vessel, the water level in the vessel becomes 22.50 cm. If the cuboid is placed horizontally inside the vessel, the top surface of the cuboid could be how much below the level of the water in the vessel? (Radius of the vessel is more than 20 cm)

A. 4.8 cm
B. 7.2 cm
C. 5.6 cm
D. 5.8 cm
E. None of these

There are 4 trains (A, B, C and D) running between stations P and Q. On a particular day, when A and B were running from P to Q and C and D were running from Q to P: A crossed B, C and D in 112 seconds, 8 seconds and 10 seconds respectively. B crosses D in 12.80 seconds and a 240-meter-long platform in 40 seconds.

4 ट्रेनें (A, B, C और D) स्टेशन P और Q के बीच चलती हैं। एक विशेष दिन पर, जब A और B स्टेशन P से Q की ओर चल रही थीं और C और D स्टेशन Q से P की ओर चल रही थीं: A ने B, C और D को क्रमशः 112 सेकंड, 8 सेकंड और 10 सेकंड में पार किया। B ने D को 12.80 सेकंड और 240 मीटर लंबे प्लेटफ़ॉर्म को 40 सेकंड में पार किया।

The table below shows each train's time (in seconds) to cross a pole.
नीचे दिया गया टेबल प्रत्येक ट्रेन द्वारा एक पोल को पार करने में लिए गए समय (सेकंड में) को दिखाता है।

| A | B | C | D |
|---|---|---|---|
| 10 | 24 | 7 | 10 |

Train A is faster than Train B.

Train A ट्रेन B से तेज़ है।

There are 4 trains (A, B, C and D) running between stations P and Q. On a particular day, when A and B were running from P to Q and C and D were running from Q to P: A crossed B, C and D in 112 seconds, 8 seconds and 10 seconds respectively. B crosses D in 12.80 seconds and a 240-meter-long platform in 40 seconds.

The table below shows each train's time (in seconds) to cross a pole.

| A | B | C | D |
|---|---|---|---|
| 10 | 24 | 7 | 10 |

Train A is faster than Train B.

The speed of D is 50% more than the speed of Train E. While running in the same direction Train E overtakes Train A in "Z + 15" seconds and while running in the opposite directions A and E cross each other in "Z – 15" seconds. What is the length of Train E?

D की गति ट्रेन E की गति से 50% अधिक है। जब E और A एक ही दिशा में दौड़ते हैं, तो ट्रेन E ट्रेन A को "Z + 15" सेकंड में पछाड़ती है। जब A और E विपरीत दिशाओं में दौड़ते हैं, तो वे एक-दूसरे को "Z – 15" सेकंड में पार करते हैं। ट्रेन E की लंबाई क्या है?

(A) 600 meters
(B) 700 meters
(C) 800 meters
(D) 900 meters
(E) None of these

The speed of D is 50% more than the speed of Train E. While running in the same direction Train E overtakes Train A in “Z + 15” seconds and while running in the opposite directions A and E cross each other in “Z – 15” seconds. What is the length of Train E?’

(A) 600 meters
(B) 700 meters
(C) 800 meters
(D) 900 meters
(E) None of these

Train B can cross a platform in 40 seconds. When some coaches of length 25 meters each are added to the train, the train takes 60 seconds to cross the platform at the same speed. How many coaches are added?

ट्रेन B एक प्लेटफ़ॉर्म को 40 सेकंड में पार कर सकती है। जब ट्रेन में 25 मीटर लंबे कुछ डिब्बे जोड़े जाते हैं, तो ट्रेन उसी गति से प्लेटफ़ॉर्म को 60 सेकंड में पार करती है। कितने डिब्बे जोड़े गए?

(A) 10
(B) 12
(C) 15
(D) 16
(E) None of these

Train B can cross a platform in 40 seconds. When some coaches of length 25 meters each are added to the train, the train takes 60 seconds to cross the platform at the same speed. How many coaches are added?

(A) 10
(B) 12
(C) 15
(D) 16
(E) None of these

A man is running in the same direction as Train C. Train C cross the man in 10 seconds. If the train is faster than the man, what is the speed of the man?

एक आदमी ट्रेन C की दिशा में दौड़ रहा है। ट्रेन C आदमी को 10 सेकंड में पार करती है। यदि ट्रेन आदमी से तेज़ है, तो आदमी की गति क्या है?

(A) 12 km/hr
(B) 17.80 km/hr
(C) 25 km/hr
(D) 43.20 km/hr
(E) None of these

A man is running in the same direction as Train C. Train C cross the man in 10 seconds. If the train is faster than the man, what is the speed of the man?

(A) 12 km/hr
(B) 17.80 km/hr
(C) 25 km/hr
(D) 43.20 km/hr
(E) None of these

If both C and D are running in the same direction, in how many seconds can the faster one overtake the slower one?

यदि C और D एक ही दिशा में दौड़ते हैं, तो तेज़ ट्रेन धीमी ट्रेन को कितने समय में पछाड़ेगी?

(A) 40 seconds
(B) 44 seconds
(C) 48 seconds
(D) 52 seconds
(E) None of these

If both C and D are running in the same direction, in how many seconds can the faster one overtake the slower one?

(A) 40 seconds
(B) 44 seconds
(C) 48 seconds
(D) 52 seconds
(E) None of these

a, b, c, d and e are five distinct natural numbers, less than 150, satisfying the following relations. ('P' is a natural number.)

a, b, c, d और e पाँच भिन्न प्राकृतिक संख्याएँ हैं, जो 150 से कम हैं, तथा निम्नलिखित संबंधों को संतुष्ट करती हैं। ('P' एक प्राकृतिक संख्या है।)

$a^3 = a^2 + d$

$e = (12a + 2)(a - 3)$

$b = d + P$

c is the LCM of a, b, and d

c, a, b और d का लघुत्तम समापवर्त्य (LCM) है।

a, b, c, d and e are five distinct natural numbers, less than 150, satisfying the following relations. ('P' is a natural number.)

$a^3 = a^2 + d$

$e = (12a + 2)(a - 3)$

$b = d + P$

c is the LCM of a, b, and d

Find the value of c × a − 2e.
c × a − 2e का मान ज्ञात करें।

A. 424
B. 328
C. 476
D. 412
E. None of these

Find the value of $c \times a - 2e$.

A. 424
B. 328
C. 476
D. 412
E. None of these

If the present age of two persons is ‘b’ years and ‘d’ years, how many years ago was the ratio of their ages 7 : 4, respectively?

यदि दो व्यक्तियों की वर्तमान आयु क्रमशः ‘b’ वर्ष और ‘d’ वर्ष है, तो कितने वर्ष पहले उनकी आयु का अनुपात 7:4 था?

A. 18
B. 24
C. 20
D. 16
E. None of these

If the age of two members is ‘b’ and ‘d’ years, how many years ago was the ratio of their ages 7 : 4, respectively?

A. 18
B. 24
C. 20
D. 16
E. None of these

An item marked ‘e’% above its cost price is sold for Rs. ‘3c’ following a 10% discount. Find the cost price of the item.

एक वस्तु जिसकी कीमत लागत मूल्य से ‘e’% अधिक अंकित है, उसे ‘3c’ रुपये में बेचा गया, 10% छूट के बाद। वस्तु की लागत मूल्य ज्ञात करें।

A. Rs. 360
B. Rs. 540
C. Rs. 320
D. Rs. 275
E. None of these

An item marked ‘e’% above its cost price is sold for Rs. ‘3c’ following a 10% discount. Find the cost price of the item.

A. Rs. 360
B. Rs. 540
C. Rs. 320
D. Rs. 275
E. None of these

Raju and Shyam have a certain number of coins with them.
Raju took half of his coins and tossed them one at a time and noted the obtained results in the same order. Shyam took as many coins as Raju and tossed them one at a time and noted the obtained results in the same order. The probability that Shyam obtained the same results in the same order as Raju is 1/16.
If Shyam spends at least one coin but not all of them, the chances that he will still have more coins than Raju is 0.6.

राजू और श्याम के पास कुछ सिक्के हैं। राजू ने अपने सिक्कों में से आधे सिक्के लिए और उन्हें एक-एक करके उछाला और प्राप्त परिणामों को उसी क्रम में नोट किया। श्याम ने राजू के जितने ही सिक्के लिए और उन्हें एक-एक करके उछाला और प्राप्त परिणामों को उसी क्रम में नोट किया। इस बात की संभावना कि श्याम को वही परिणाम उसी क्रम में मिलें जो राजू को मिले, 1/16 है।
यदि श्याम कम से कम एक सिक्का खर्च करता है लेकिन सारे सिक्के खर्च नहीं करता, तो उसके पास अभी भी राजू से अधिक सिक्के होने की संभावना 0.6 है।

Raju and Shyam have a certain number of coins with them.
Raju took half of his coins and tossed them one at a time and noted the obtained results in the same order. Shyam took as many coins as Raju and tossed them one at a time and noted the obtained results in the same order. The probability that Shyam obtained the same results in the same order as Raju is 1/16.
If Shyam spends at least one coin but not all of them, the chances that he will still have more coins than Raju is 0.6.

If Raju has 5 fewer coins than Karan, what is the difference between the number of coins with Karan and Shyam?

यदि राजू के पास करण से 5 कम सिक्के हैं, तो करण और श्याम के पास सिक्कों की संख्या में कितना अंतर है?

A. 5
B. 6
C. 12
D. 10
E. None of these

If Raju has 5 fewer coins than Karan, what is the difference between the number of coins with Karan and Shyam?

A. 5
B. 6
C. 12
D. 10
E. None of these

If Shyam and Raju both spend a certain number of coins, what is the probability that both spend the same number of coins?

यदि श्याम और राजू दोनों कुछ सिक्के खर्च करते हैं, तो इस बात की संभावना क्या है कि दोनों ने समान संख्या में सिक्के खर्च किए?

A. 8/21
B. 3/40
C. 1/20
D. 1/7
E. None of these

If Shyam and Raju both spend a certain number of coins, what is the probability that both spend the same number of coins?

A. 8/21
B. 3/40
C. 1/20
D. 1/7
E. None of these

Karan has ‘x’ more coins than Raju and ‘$y^2$’ fewer coins than Shyam. If Karan tosses all of his coins one at a time, what is the probability that the first, second, second last and the last results are same?

करण के पास राजू से ‘x’ अधिक सिक्के और श्याम से ‘$y^2$’ कम सिक्के हैं। यदि करण अपने सभी सिक्कों को एक-एक करके उछालता है, तो पहले, दूसरे, दूसरे अंतिम और अंतिम परिणाम समान होने की संभावना क्या है?

A. 1/4
B. 1/8
C. 3/16
D. Can’t be determined
E. None of these

Karan has ‘x’ more coins than Raju and ‘$y^2$’ fewer coins than Shyam. If Karan tosses all of his coins one at a time, what is the probability that the first, second, second last and the last results are same?

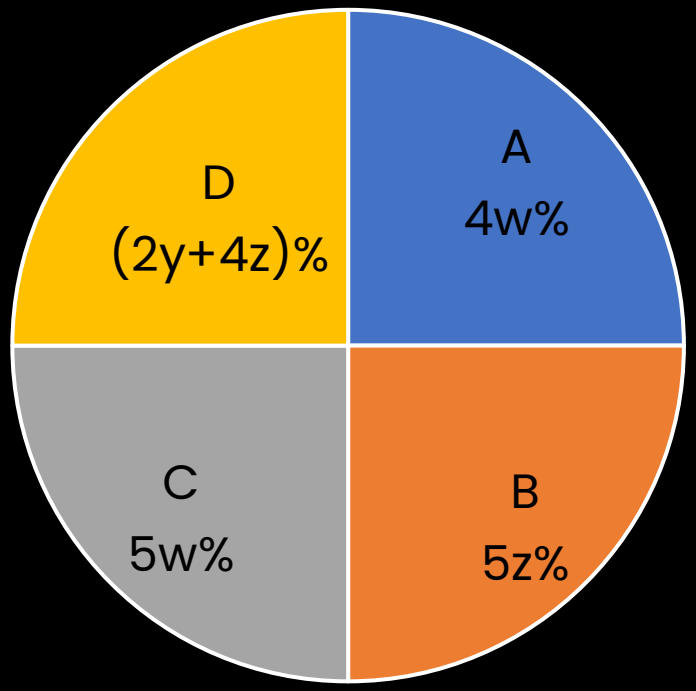
A. 1/4
B. 1/8
C. 3/16
D. Can’t be determined
E. None of these

In 2004, a family had four members A, B, C, and D. After 'm' years, a child named 'E' was born, and 'm' more years later, twins 'F' and 'G' were born. All family members share the same birthdate, January 1st.

2004 में, एक परिवार में चार सदस्य थे: A, B, C, और D। 'm' वर्षों के बाद, एक बच्चे 'E' का जन्म हुआ, और 'm' और वर्षों बाद जुड़वाँ बच्चे 'F' और 'G' का जन्म हुआ। परिवार के सभी सदस्य एक ही जन्मदिन साझा करते हैं, 1 जनवरी।

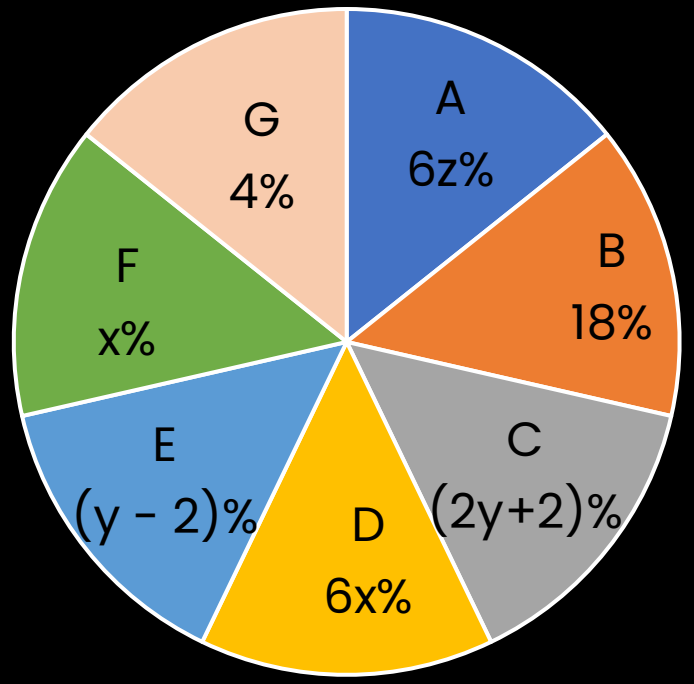
The pie chart given below shows the percentage distribution of the age of family members in 2004.

नीचे दिया गया पाई चार्ट 2004 में परिवार के सदस्यों की आयु का प्रतिशत वितरण दिखाता है।



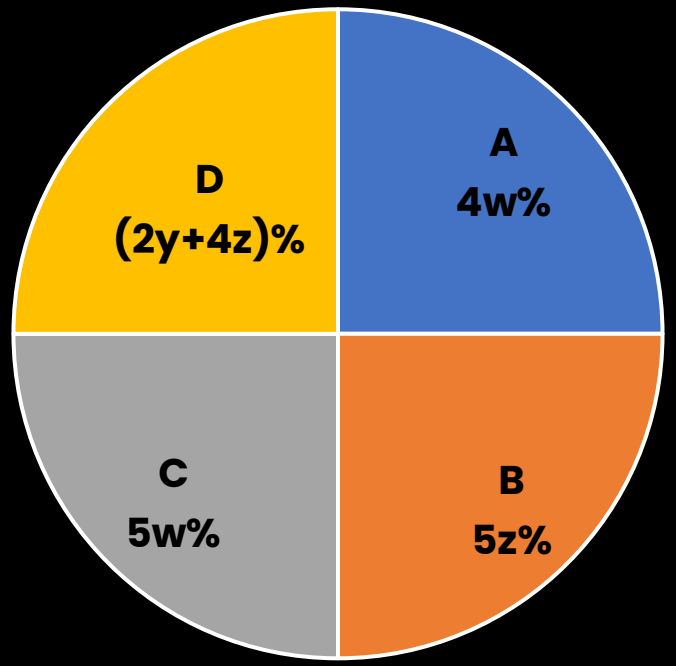

The pie chart given below shows the percentage distribution of the age of family members '3m' years after 2004.

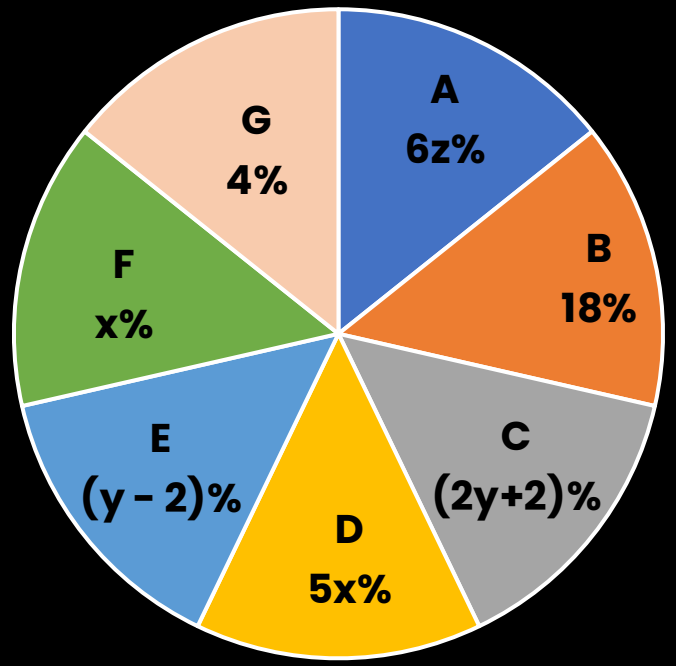
नीचे दिया गया पाई चार्ट 2004 के '3m' वर्ष बाद परिवार के सदस्यों की आयु का प्रतिशत वितरण दिखाता है।



‘3m’ years after 2004, C was 55 years old. What was the age of A, ‘m’ years before 2004?
‘3m’ वर्षों बाद 2004, ‘C’ की आयु 55 वर्ष थी। 2004 से ‘m’ वर्ष पहले ‘A’ की आयु क्या थी?

A. 12 years
B. 6 years
C. 10 years
D. 16 years
E. None of these



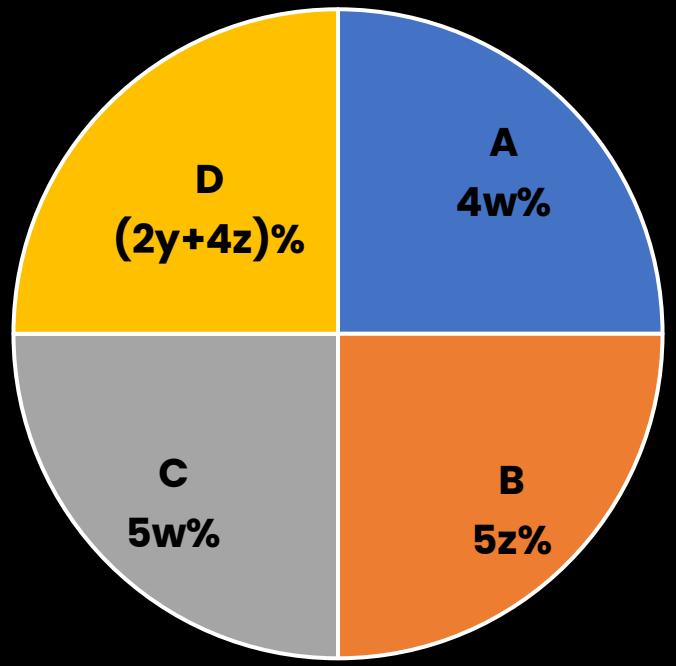



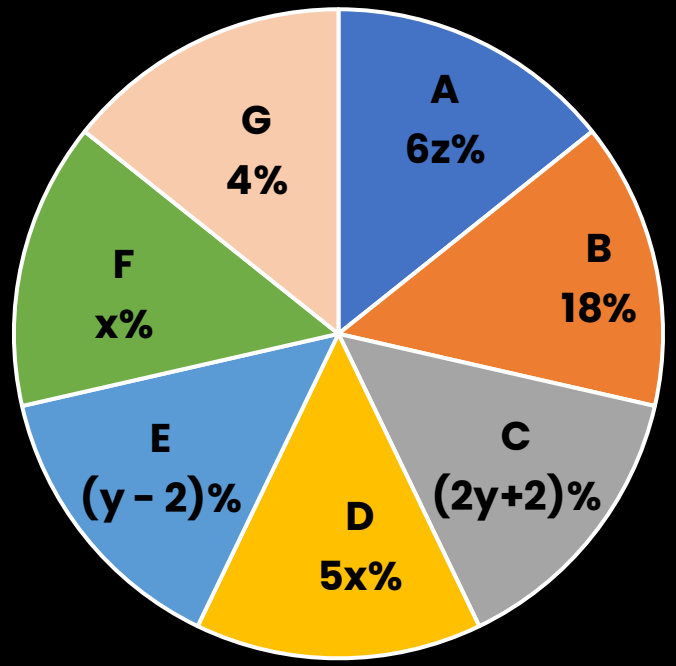
‘3m’ years after 2004, C was 55 years old. What was the age of A, ‘m’ years before 2004?

A. 12 years
B. 6 years
C. 10 years
D. 16 years
E. None of these

If ‘m’ = 6, what was the ratio of the age of E to that of B in 2020?
यदि ‘m’ = 6, तो 2020 में ‘E’ की आयु और ‘B’ की आयु का अनुपात क्या होगा?

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



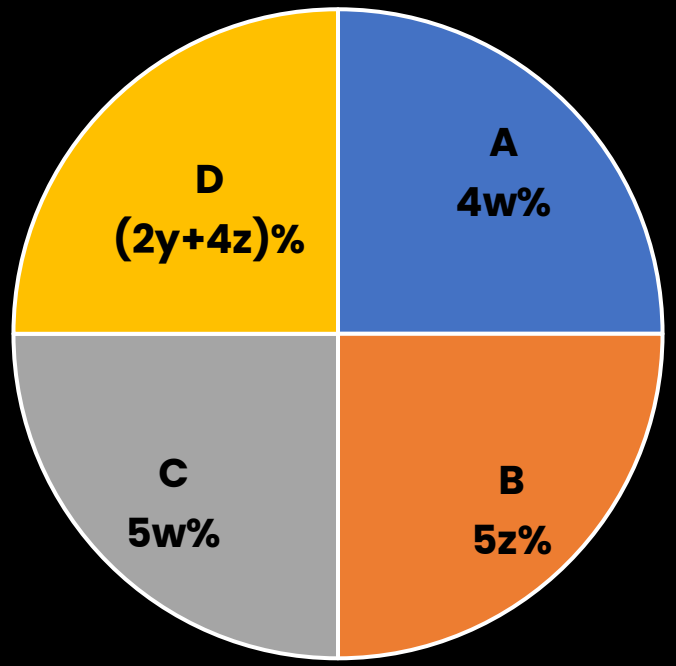



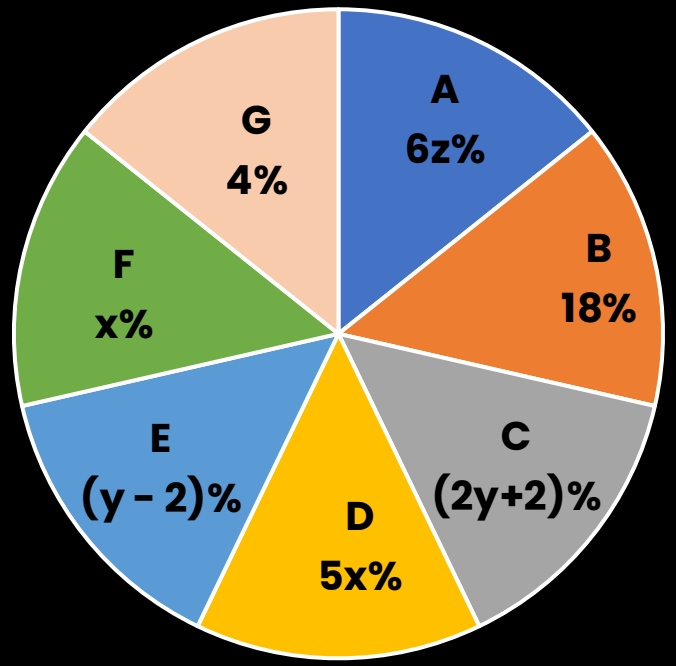
If ‘m’ = 6, what was the ratio of the age of E to that of B in 2020?

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

In 2004, if the age gap between A and C was 8 years, how old was D?
2004 में, यदि 'A' और 'C' के बीच का आयु अंतर 8 वर्ष था, तो 'D' की आयु कितनी थी?

A. 54 years
B. 40 years
C. 48 years
D. 32 years
E. None of these



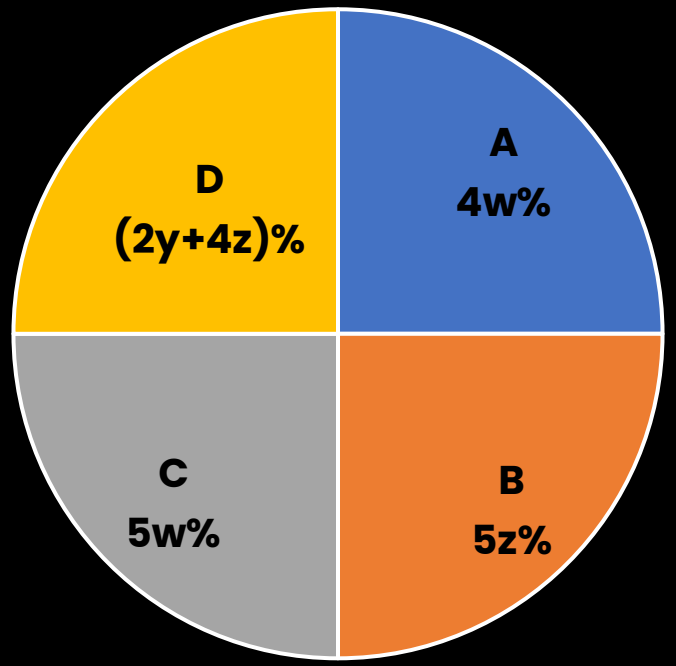
In 2004, if the age gap between A and C was 8 years, what how old was D?

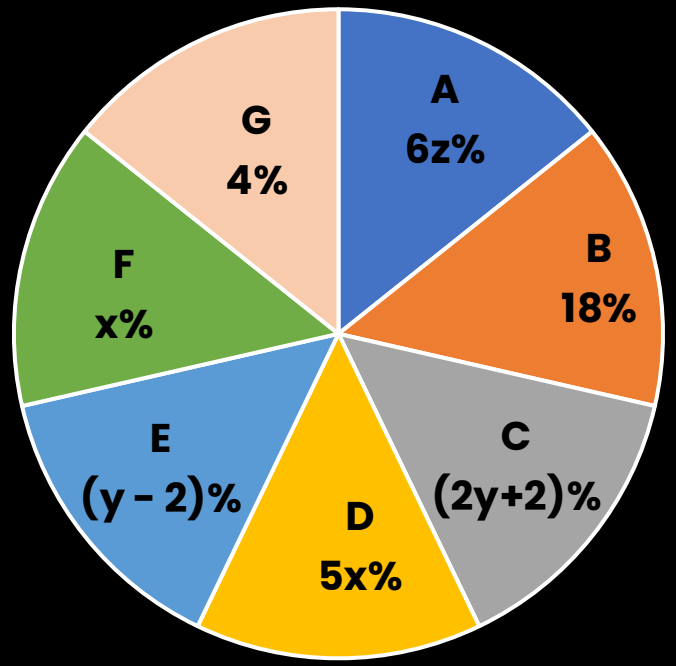
A. 54 years
B. 40 years
C. 48 years
D. 32 years
E. None of these

‘3m’ years after 2004, the age of which of the following pair of members was ‘y + z’ years and ‘6w’ years, respectively.

‘3m’ वर्षों बाद 2004, निम्नलिखित सदस्य जोड़े में से किसकी आयु क्रमशः ‘y + z’ और ‘6w’ थी?

A. E and A
B. F and C
C. B and D
D. G and B
E. Can’t be determined



‘3m’ years after 2004, the age of which of the following pair of members was ‘y + z’ years and ‘6w’, respectively.

A. E and A
B. F and C
C. B and D
D. G and B
E. Can’t be determined

There are 2 canals (A and B) and 3 boats (Q, R and S). The speed of the water of canals A and B are 7.50z m/s and 5z m/s.
The table given below shows the time (in hrs) taken by boats Q, R and S to travel 'D' km upstream in A also the time (in hrs) taken by boats Q, R and S to travel '2D' km downstream in B.
2 नहरें (A और B) और 3 नावें (Q, R और S) हैं।
नहर A और B में पानी की गति क्रमशः 7.50z m/s और 5z m/s है।
नीचे दिया गया टेबल नावों Q, R और S द्वारा नहर A में 'D' किमी अपस्ट्रीम यात्रा करने और नहर B में '2D' किमी डाउनस्ट्रीम यात्रा करने में लिए गए समय (घंटों में) को दिखाता है।

| Boat | Downstream time in B | Upstream time in A |
|---|---|---|
| Q | 5X | 12Y |
| R | 4X | 4X |
| S | 8Y | 9Y |

If Boat S travels 50 km upstream and 45 km downstream in Canal B and takes 3 hours, what is the upstream speed of Q in Canal A?

यदि नाव S नहर B में 50 किमी अपस्ट्रीम और 45 किमी डाउनस्ट्रीम यात्रा करती है और 3 घंटे लेती है, तो नहर A में Q की अपस्ट्रीम गति क्या है?

(A) 9 km/hr
(B) 10 km/hr
(C) 12 km/hr
(D) 15 km/hr
(E) None of these

If Boat S travels 50 km upstream and 45 km downstream in Canal B and takes 3 hours, what is the upstream speed of Q in Canal A?

(A) 9 km/hr
(B) 10 km/hr
(C) 12 km/hr
(D) 15 km/hr
(E) None of these

Boats Q and R travel in Canal B from Point J to Point K and then come back to Point J. Boats Q and R take 'H + 1.30" hours and 'H – 1.30" hours respectively. If the difference between the speed of streams of both canals is 5 km/hr, what is the distance (in km) between points J and K?

नावें Q और R नहर B में पॉइंट J से पॉइंट K तक यात्रा करती हैं और फिर पॉइंट J पर वापस आती हैं। Q और R क्रमशः 'H + 1.30" घंटे' और 'H – 1.30" घंटे' लेती हैं। यदि दोनों नहरों के स्ट्रीम की गति में अंतर 5 किमी/घंटा है, तो पॉइंट J और K के बीच की दूरी (किमी में) कितनी है?

(A) 60
(B) 90
(C) 120
(D) 150
(E) None of these

Boats Q and R travel in Canal B from Point J to Point K and then come back to Point J. Boats Q and R take ‘H + 1.30” hours and ‘H - 1.30” hours respectively. If the difference between the speed of streams of both canals is 5 km/hr, what is the distance (in km) between points J and K?

(A) 60
(B) 90
(C) 120
(D) 150
(E) None of these

What is the value of “X – Z” : “Y – Z”?
“X – Z” : “Y – Z” का मान क्या है?

(A) 13 : 5
(B) 43 : 23
(C) 1 : 2
(D) 2 : 7
(E) Cannot be determined

What is the value of “X – Z” : “Y – Z”?

(A) 13 : 5
(B) 43 : 23
(C) 1 : 2
(D) 2 : 7
(E) Cannot be determined

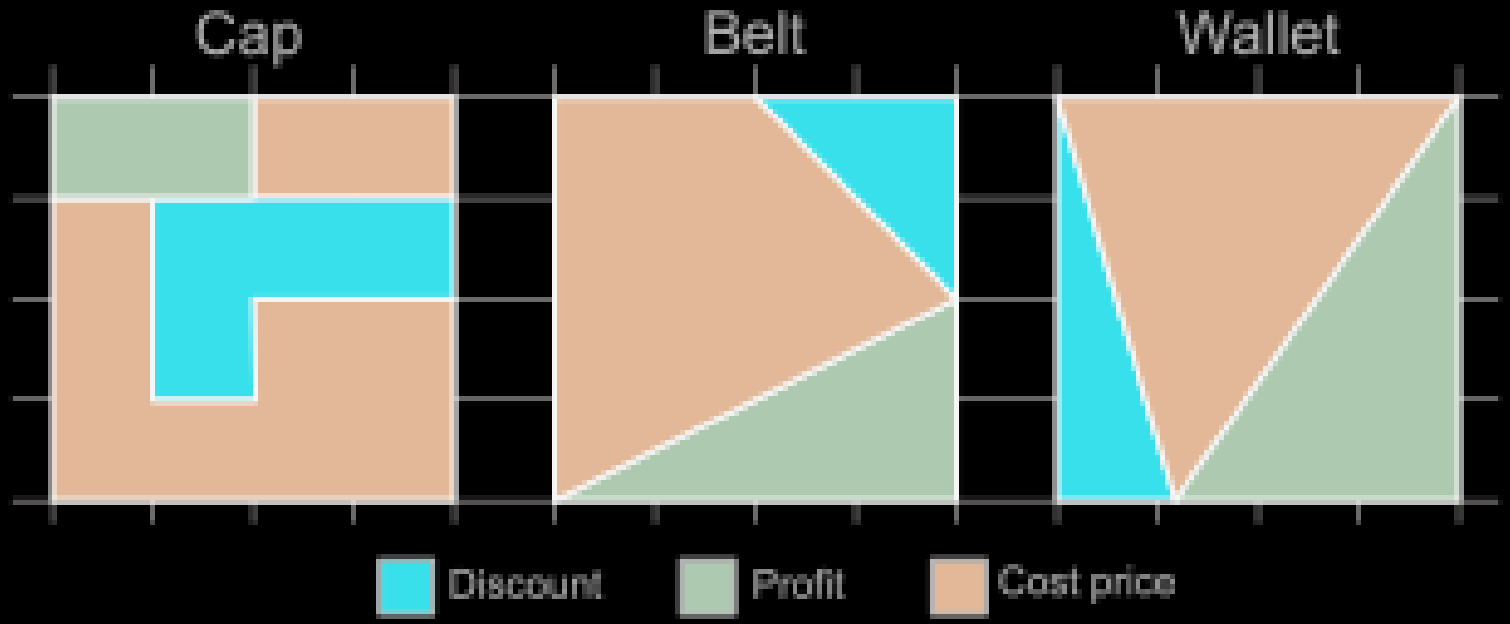
A shopkeeper sold some caps, belts and wallets at a certain discount and gained certain profit on each type of item.
The chart given below shows the percentage distribution of the marked price into the cost price, profit and the discount for each type of item.

एक दुकानदार ने कुछ टोपी, बेल्ट और वॉलेट को एक निश्चित छूट पर बेचा और प्रत्येक प्रकार की वस्तु पर एक निश्चित लाभ कमाया।
नीचे दिए गए चार्ट में प्रत्येक उत्पाद के अंकित मूल्य का प्रतिशत वितरण लागत मूल्य, लाभ और छूट के रूप में दिखाया गया है।

If the percentage discount offered on the cap and the wallet are reversed, the selling price of the cap will decrease by 13.33%. If the wallet costs twice as much as the cap, find the ratio of the selling price of the cap to that of the wallet.

यदि टोपी और वॉलेट पर दी गई छूट को आपस में बदल दिया जाए, तो टोपी की बिक्री मूल्य 13.33% कम हो जाएगी। यदि वॉलेट की कीमत टोपी की कीमत से दोगुनी है, तो टोपी और वॉलेट की बिक्री मूल्य का अनुपात क्या होगा?

A. 6 : 7
B. 3 : 4
C. 6 : 13
D. 12 : 17
E. None of these



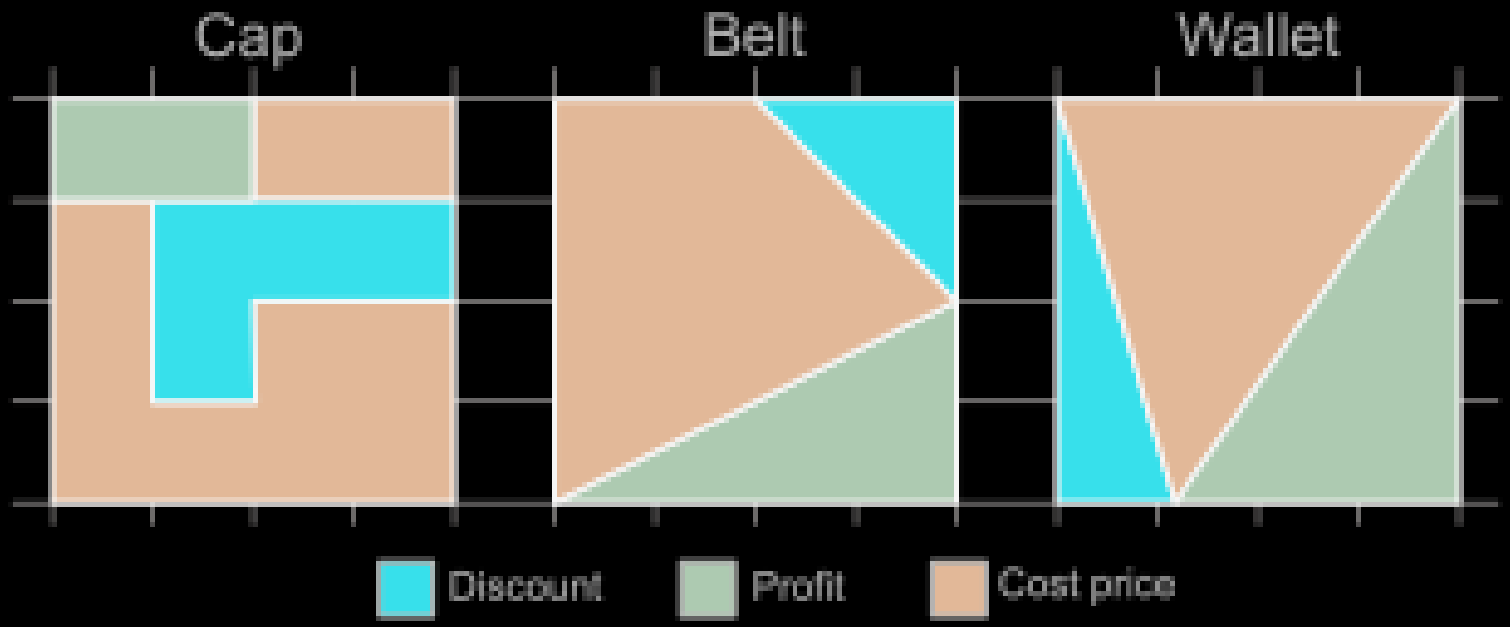
If the percentage discount offered on the cap and the wallet are reversed, the selling price of the cap will decrease by 13.33%. If the wallet costs twice as much as the cap, find the ratio of the selling price of the cap to that of the wallet.

A. 6 : 7
B. 3 : 4
C. 6 : 13
D. 12 : 17
E. None of these

The caps and the belts are sold at an average percentage profit of 36.67%. The total profit from the sales of caps is 1/3rd of the total profit from the sales of caps and belts. If the shopkeeper sold a total of 12 belts, how many caps did he sell?

टोपी और बेल्ट को औसत 36.67% लाभ पर बेचा गया। टोपी की बिक्री से प्राप्त कुल लाभ, टोपी और बेल्ट की बिक्री से प्राप्त कुल लाभ का 1/3 है। यदि दुकानदार ने कुल 12 बेल्ट बेचे, तो उसने कितनी टोपी बेची?

A. 48
B. 72
C. 90
D. 60
E. None of these



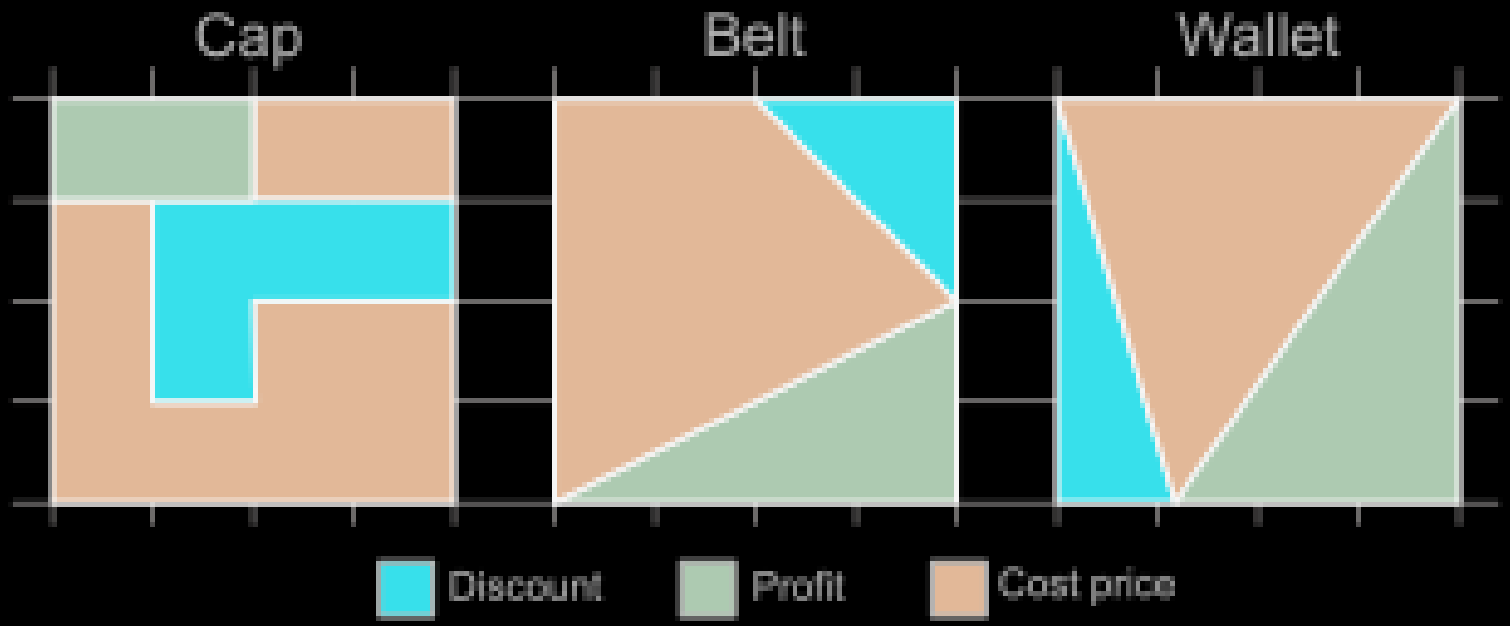
The cap and the belt are sold at an average percentage profit of 36.67%. The total profit from the sales of caps is 1/3$^{rd}$ of the total profit from the sales of caps and belts. If the shopkeeper sold a total of 12 belts, how many caps did he sell?

A. 48
B. 72
C. 90
D. 60
E. None of these

The average marked price of the belt and the wallet is Rs. 800 and the wallet is sold for Rs. 16 less amount of profit than Belt. If the wallet is sold at a 30% profit, find the amount of discount offered on the wallet.

बेल्ट और वॉलेट का औसत अंकित मूल्य 800 रुपये है और वॉलेट बेल्ट की तुलना में 16 रुपये कम लाभ में बेचा गया। यदि वॉलेट 30% लाभ पर बेचा गया, तो वॉलेट पर दी गई छूट का मान ज्ञात करें।

A. Rs. 432
B. Rs. 372
C. Rs. 336
D. Rs. 296
E. None of these



The average marked price of the belt and the wallet is Rs. 800 and the wallet is sold for Rs. 16 less amount of profit than Belt. If the wallet is sold at a 30% profit, find the amount of discount offered on the wallet.

A. Rs. 432
B. Rs. 372
C. Rs. 336
D. Rs. 296
E. None of these

The number of persons at a theatre is (105 - Z) and each of the them watched at least one movie from Dunkirk, Tenet and Interstellar. The persons who watched all three movies are ‘k’% less than those who watched Tenet and Interstellar but not Dunkirk, who are ‘k’% less than those watched only Tenet, who are ‘k’% less than those who watched Dunkirk, who are ‘k’% less than those who watched only Interstellar. (0.5k)% of the persons who watched Interstellar also watched Dunkirk but not Tenet. (k and Z are positive)

एक थिएटर में कुल व्यक्तियों की संख्या (105 - Z) है, और उनमें से प्रत्येक ने Dunkirk, Tenet, और Interstellar में से कम से कम एक फिल्म देखी है। जो लोग तीनों फिल्में देखते हैं, उनकी संख्या उन लोगों से ‘k’% कम है जो Tenet और Interstellar देखते हैं लेकिन Dunkirk नहीं देखते। Tenet और Interstellar (लेकिन Dunkirk नहीं) देखने वालों की संख्या उन लोगों से ‘k’% कम है, जो केवल Tenet देखते हैं। केवल Tenet देखने वालों की संख्या Dunkirk देखने वालों की संख्या से 'k'% कम है। Dunkirk देखने वालों की संख्या केवल Interstellar देखने वालों की संख्या से ‘k’% कम है। इसके अतिरिक्त, जो लोग Interstellar और Dunkirk देखते हैं लेकिन Tenet नहीं देखते, वे (0.5k)% हैं, Interstellar देखने वाले सभी व्यक्तियों की संख्या का। (यहाँ k और Z सकारात्मक संख्याएँ हैं।)

The number of persons at a theatre is (105 – Z) and each of the them watched at least one movie from Dunkirk, Tenet and Interstellar. The persons who watched all three movies are ‘k’% less than those who watched Tenet and Interstellar but not Dunkirk, who are ‘k’% less than those watched only Tenet, who are ‘k’% less than those who watched Dunkirk, who are ‘k’% less than those who watched only Interstellar. (0.5k)% of the persons who watched Interstellar also watched Dunkirk but not Tenet. (k and Z are positive)

How many persons have not watched Interstellar?
कितने व्यक्तियों ने Interstellar नहीं देखी?

A. 14
B. 18
C. 21
D. 17
E. Can’t be determined

How many persons have not watched Interstellar?

A. 14
B. 18
C. 21
D. 17
E. Can’t be determined

What percent of the persons in the theatre watched only Tenet?

थिएटर में उपस्थित व्यक्तियों में से कितने प्रतिशत ने केवल Tenet देखी?

A. 12.50
B. 8.33
C. 13.33
D. 16.67
E. None of these

What percent of the persons in the theatre have watched only Tenet?

A. 12.50
B. 8.33
C. 13.33
D. 16.67
E. None of these

What could be the maximum number of persons who watched more than one movie?

कितने व्यक्तियों ने एक से अधिक फिल्में देखीं, इसकी अधिकतम संख्या क्या हो सकती है?

A. 25
B. 20
C. 36
D. 30
E. None of these

What could be the maximum number of persons who watched more than one movie?

A. 25
B. 20
C. 36
D. 30
E. None of these

P, Q, R, S, and T are five different mixtures of juice, honey and water.
The table given below shows the percentage of juice, honey and water in the five mixtures.
P, Q, R, S और T पांच मिश्रण हैं, जिनमें जूस, शहद और पानी होते हैं।
नीचे दिए गए तालिका में इन मिश्रणों में जूस, शहद और पानी का प्रतिशत दिखाया गया है।

| | P | Q | R | S | T |
|---|---|---|---|---|---|
| Juice | z | 4x | | 3x | 3p |
| Honey | y + 10 | y – 5 | 4p | y – 5 | p |
| Water | | | 0.4z | (y + 20) | 2z |

If ‘4M’ liters of mixture S is replaced with ‘M’ liters of juice, there will be no change in the quantity of juice in the mixture. Find the quantity of honey in mixture Q, if it contains 60 liters of water.

यदि मिश्रण S में से ‘4M’ लीटर मिश्रण को निकालकर ‘M’ लीटर जूस डाल दिया जाए, तो मिश्रण में जूस की मात्रा में कोई परिवर्तन नहीं होगा। मिश्रण Q में शहद की मात्रा ज्ञात करें, यदि उसमें 60 लीटर पानी है।

A. 24 lit
B. 48 lit
C. 36 lit
D. 18 lit
E. None of these

| | P | Q | R | S | T |
|---|---|---|---|---|---|
| Juice | z | 4x | | 3x | 3p |
| Honey | y + 10 | y – 5 | 4p | y – 5 | p |
| Water | | | 0.4z | (y + 20) | 2z |

If ‘4M’ liters of mixture S is replaced with ‘M’ liters of juice, there will be no change in the quantity of juice. Find the quantity of honey in mixture Q, if it contains 60 liters of water.

A. 24 lit
B. 48 lit
C. 36 lit
D. 18 lit
E. None of these

Mixture R contains 20% less water than mixture T and they both contain an average of 42.50% honey. Find the percentage of juice in mixture R.

मिश्रण R में मिश्रण T की तुलना में 20% कम पानी है और दोनों में औसत 42.50% शहद है। मिश्रण R में जूस का प्रतिशत ज्ञात करें।

A. 25
B. 62.50
C. 37.50
D. 40
E. None of these

| | P | Q | R | S | T |
|---|---|---|---|---|---|
| Juice | z | 4x | | 3x | 3p |
| Honey | y + 10 | y – 5 | 4p | y – 5 | p |
| Water | | | 0.4z | (y + 20) | 2z |

Mixture R contains 20% less water than mixture T and they both contain an average of 42.50% honey. Find the percentage of juice in mixture R.

A. 25
B. 62.50
C. 37.50
D. 40
E. None of these

Mixtures P and Q have the same quantity of honey. The concentration of honey in mixture P is the same as the concentration of water in mixture Q. What is the ratio of the quantity of mixture P to that of mixture Q?

मिश्रण P और Q में शहद की मात्रा समान है। मिश्रण P में शहद की सांद्रता मिश्रण Q में पानी की सांद्रता के समान है। मिश्रण P और Q की मात्रा का अनुपात क्या है?

A. 2 : 3
B. 3 : 5
C. 5 : 8
D. 1 : 2
E. Can't be determined

| | P | Q | R | S | T |
|---|---|---|---|---|---|
| Juice | z | 4x | | 3x | 3p |
| Honey | y + 10 | y – 5 | 4p | y – 5 | p |
| Water | | | 0.4z | (y + 20) | 2z |

Mixtures P and Q have the same quantity of honey. The concentration of honey in mixture P is the same as the concentration of water in mixture Q. What is the ratio of the quantity of mixture P to that of mixture Q?

A. 2 : 3
B. 3 : 5
C. 5 : 8
D. 1 : 2
E. Can’t be determined

Arun and Vinay invested certain amount in three different schemes P, Q, and R, each offering a different rate of per annum compound interest. For each scheme, the rate of interest in the second year is 20% less than that in the first year and the rate of interest in the third year is 25% more than that in the second year. The amount of interest increased each year in each scheme.
अरुण और विनय ने तीन अलग-अलग योजनाओं P, Q और R में कुछ राशि निवेश की, जिनमें से प्रत्येक प्रति वर्ष चक्रवृद्धि ब्याज की अलग-अलग दर प्रदान करती है। प्रत्येक योजना के लिए, दूसरे वर्ष में ब्याज दर पहले वर्ष की तुलना में 20% कम है और तीसरे वर्ष में ब्याज दर दूसरे वर्ष की तुलना में 25% अधिक है। प्रत्येक योजना में ब्याज की राशि प्रत्येक वर्ष बढ़ती गई।

The table given below shows the difference between the first year's interest and second year's interest and also the difference between the first year's interest and third year's interest for Arun and Vinay.
नीचे दिया गया तालिका अरुण और विनय के लिए पहले वर्ष के ब्याज और दूसरे वर्ष के ब्याज के बीच का अंतर, तथा पहले वर्ष के ब्याज और तीसरे वर्ष के ब्याज के बीच का अंतर दिखाता है।

| | | P | Q | R |
|---|---|---|---|---|
| Difference between 1st year's & 2nd year 's interest | Arun | 120 | | 150 |
| | Vinay | 30 | 960 | |
| Difference between 1st year's & 3rd year's interest | Arun | | 110 | 1550 |
| | Vinay | 212 | | 620 |

Arun invested Rs. 1875 more than Vinay in scheme P. In Scheme P, if third year's interest of Arun is Rs. 1848, what is first year's interest of Vinay?

अरुण ने योजना P में विनय की तुलना में ₹1875 अधिक निवेश किया। यदि योजना P में अरुण का तीसरे वर्ष का ब्याज ₹1848 है, तो विनय का पहले वर्ष का ब्याज कितना है?

A. Rs. 320
B. Rs. 180
C. Rs. 250
D. Rs. 200
E. None of these

| | | P | Q | R |
|---|---|---|---|---|
| Difference between 1st year's & 2nd year 's interest | Arun | 120 | | 150 |
| | Vinay | 30 | 960 | |
| Difference between 1st year's & 3rd year's interest | Arun | | 110 | 1550 |
| | Vinay | 212 | | 620 |

Arun invested Rs. 1875 more than Vinay in scheme P. In Scheme P, if third year's interest of Arun is Rs. 1848, what is first year's interest of Vinay?

A. Rs. 320
B. Rs. 180
C. Rs. 250
D. Rs. 200
E. None of these

If Vinay obtained a total interest of Rs. 3380 from scheme R, what sum of money did he invest in that scheme?

यदि विनय को योजना R से कुल Rs. 3380 का ब्याज मिला, तो उन्होंने उस योजना में कितनी राशि का निवेश किया?

A. Rs. 3600
B. Rs. 3000
C. Rs. 2700
D. Rs. 4500
E. None of these

| | | P | Q | R |
|---|---|---|---|---|
| Difference between 1st year's & 2nd year 's interest | Arun | 120 | | 150 |
| | Vinay | 30 | 960 | |
| Difference between 1st year's & 3rd year's interest | Arun | | 110 | 1550 |
| | Vinay | 212 | | 620 |

If Vinay obtained a total interest of Rs. 3380 from scheme R, what sum of money did he invest in that scheme?

A. Rs. 3600
B. Rs. 3000
C. Rs. 2700
D. Rs. 4500
E. None of these

For Arun, the difference between the first year's interest and the second year's interest from scheme Q is Rs. 20. What can be the total interest obtained by Arun in the three years from scheme Q?

अरुण के लिए, योजना Q से पहले वर्ष के ब्याज और दूसरे वर्ष के ब्याज के बीच का अंतर ₹20 है। योजना Q से तीन वर्षों में अरुण द्वारा प्राप्त कुल ब्याज कितना हो सकता है?

A. Rs. 520
B. Rs. 630
C. Rs. 590
D. Rs. 430
E. None of these

| | | P | Q | R |
|---|---|---|---|---|
| Difference between 1st year's & 2nd year 's interest | Arun | 120 | | 150 |
| | Vinay | 30 | 960 | |
| Difference between 1st year's & 3rd year's interest | Arun | | 110 | 1550 |
| | Vinay | 212 | | 620 |

For Arun, the difference between the first year's interest and the second year's interest from scheme Q is Rs. 20. What can be the total interest obtained by Arun in the three years from scheme Q?

A. Rs. 520
B. Rs. 630
C. Rs. 590
D. Rs. 430
E. None of these

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