Practice important Aptitude questions leading IT companies

1 The difference between the simple interest and compound interest on a certain sum of money for 2 years at 15% p. a. is Rs. 45. Find the sum.

A. Rs. 2700
B. Rs. 2500
C. Rs. 2000
D. None of these

Answer & Explanation

Answer : Option C.
Since we know that the interest rate is 0.15, and knowing that the difference between two years of compound interest is nothing but interest on interest, we can find the first year's interest as –
45/0.15 = 300.
Now if the interest is 300 at the end of one year, then the principal is 300 / 0.15 = 2,000

2 Twice the speed of a boat downstream is equal to thrice the speed upstream. The ratio of its speed in still water to the speed of current is

A. 1 : 5
B. 1 : 3
C. 5 : 1
D. 2 : 3

Answer & Explanation

Answer : Option C.
Let the boat speed in still water be b.
Let the stream speed be x.
2(b+ x) = 3(b-x)
5x=b
b/x=5/1

3 A person has a chemical of Rs. 25 per litre. In what ratio should water be mixed with that chemical so that after selling the mixture at Rs. 20/litre he may get a profit of 25%?

a. 13 : 16
b. 12 : 15
c. 9 : 16
d. 19 : 22

Answer & Explanation

Answer : Option C.
This can be solved using alligation.
What is required at the end of mixing is a price of 20/1.25 = 16.
So the alligation would look like this –
Water/0 Mixture/16 Chemical/25
Hence the ratio would be (25 – 16) : 16 = 9 : 16
Hence required ratio of Water : Chemical is 9:16.

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5 How many terms are there in an A.P. whose first and fifth terms are -14 and 2, respectively, and the sum of terms is 40?

A. 15
B. 10
C. 5
D. 20

Answer & Explanation

Answer : Option B.
Now the common difference of this AP is 16/4 = 4.
The sum of an AP is n/2 {2a + (n – 1)d}
Substituting we get, 40 = n/2 {2x-14 + (n – 1)4}
The best way to solve this is by plugging options. Put in n = 10 and get the RHS as 40.

6 In a class, 50 students play cricket, 20 students play football and 10 play both cricket and football. How many play at least one of these two games?

A. 10
B. 80
C. 50
D. 60

Answer & Explanation

Answer : Option D.
The required answer is 50 + 20 – 10 = 60.

7 **A bottle is full of Dettol. One-third of it is taken out and then an equal amount of water is poured into the bottle to fill it. This operation is done four times. Find the final ratio of dettol and water in the bottle.**

a. 13 : 55
b. 20 : 74
c. 16 : 65
d. 10 : 48

Answer & Explanation

Answer : Option C.
As in denominator we have to take 1/3 four times so, we start by assuming 81 ml of dettol in the bottle. After the first iteration you will be left with 2/3 × 81 = 54 ml. After the second iteration you will be left with 2/3 × 54 = 36 ml. After the third iteration you will be left with 2/3 × 36 = 24 ml. After the fourth iteration you will be left with 2/3 × 24 = 16 ml. So the required ratio will be 16 : (81 − 16) = 16 : 65

8 **In a survey of defaulted payments of electrical bills of a residential complex of 125 houses, it is found that 50 houses defaulted on their payment of electrical bills in January, 60 in February and 40 in March. Houses can default in consecutive months only. 20 defaulted in January and February. 10 defaulted in February and March. How many houses defaulted in all the 3 months?**

A. 3
B. 5
C. 7
D. 9

Answer & Explanation

Answer : Option B.
We use formula for intersection of three sets, keeping in mind that Jan ∩ Mar does not exist, since they are not consecutive months.
Let x be the number of people defaulting in all 3 months.

We get the equation as : 125 = 50 + 60 + 40 − 20 − 10 + x. Solving we get x = 5.

9 **A person standing on the bank of a river observes that the angle of elevation of the top of a tree on the opposite bank of the river is 60° and when he retires 40 metres away from the tree the angle of elevation becomes 30°. The breadth of the river is**

A. 40 m
B. 20 m
C. 30 m
D. 60 m

Answer & Explanation

Answer : Option B.
Let the breadth of the river be x, Using tangent rule we get,
So x = 20

10 **India plays two matches each with West Indies and Australia. In any match the probabilities of India getting points 0, 1, 2 are 0.45, 0.05 and 0.50 respectively. Assuming that outcomes are independent, the probability of India getting at least 7 points is**

A. 0.8750
B. 0.0624
C. 0.0875
D. 0.0250

Answer & Explanation

Answer : Option C.
Getting 7 points is possible in 2 cases.
Case 1: India wins all 4 matches.
Probability: $(.5)^4$ = .0625.
Case 2: India wins any of the 3 matches and draws the remaining match. This

can happen in total 4 ways. Probability: $4 \times (.50)^3 \times (.05) = .025$.
So, required probability: .0625 + .025 = .0875

11 Three persons work independently on a problem. If the respective probabilities that they will solve it are 1/3, 1/4 and 1/5, then the probability that none can solve it is

A. 1/5
B. 1/3
C. 2/5
D. None of these

Answer & Explanation

Answer : Option C.
Joint probability of all not being able to solve it is
2/3*3/4*4/5=2/5

12 The total cost of 8 buckets and 5 mugs is Rs. 92 and the total cost of 5 buckets and 8 mugs is Rs. 77. Find the cost of 2 mugs and 3 buckets.

a. Rs. 35
b. Rs. 70
c. Rs. 30
d. Rs. 38

Answer & Explanation

Answer: Option A
CP of 1 bucket = Rs. X
CP of 1 mug = Rs. Y
$\therefore 8x + 5y = 92$..... (i)
$5x + 8y = 77$ .....(ii)
By equation (i) × 5 – equation (ii) × 8.
$40x + 25y - 40x - 64y$
$= 460 - 616 \Rightarrow -39y = -156 \Rightarrow y = 4$

From equation (i),

$8x + 20 = 92 \Rightarrow 8x = 92 - 20 = 72 \Rightarrow x = 9$

$\therefore$ CP of 2 mugs and 3 buckets

$= 2 \times 4 + 3 \times 9 = 8 + 27 = Rs.\ 35$

13 Four examiners can examine a certain number of answer papers in 10 days by working for 5 hours a day. For how many hours a day would 2 examiners have to work in order to examine twice the number of answer papers in 20 days?

a. 8
b. 7.5
c. 10
d. 8.5
e. None of The above

Answer & Explanation

Answer: Option C

Examiners	Days	Hours/Day	Papers
4	10	5	x
2	20	?	2x

So, we required number of hours = so optionC is the answer

Using chain rule,

$(4 \times 10 \times 5)/X = (2 \times 20 \times Y)/2X$

$X = 10$ hrs/day

14 A sum of Rs 731 is divided among A, B and C such that 'A' receive 25% more than 'B' and 'B' receive 25% less than 'C'. What is C's share in the amount?

a. Rs. 172
b. Rs. 200
c. Rs. 262
d. Rs. 258
e. None of these

Answer & Explanation

Answer: Option E
A + B + C = 731 ..... (i)
A = 1.25B, gives A = 1.25 * 0.75 C = 0.9375 C....(ii)
B = 0.75C....(iii)
Using (ii) and (iii) in (i) we get
0.9375C + 0.75C + C = 731, gives C = 272.
So option E is the answer.

15In how many different ways can letters of the word "PRAISE" be arranged?

A. 720
B. 610
C. 360
D. 210
E. None of these

Answer & Explanation

Answer: Option A
As total number of alphabets in PRAISE are 6, so total no. of ways is 6!=720
So option A is the answer

16If the numerator of a fraction is increased by 150% and the denominator of the fraction is increased by 300%, the resultant fraction is [5/18]. What is original fraction?

A. 4/9
B. 4/5
C. 8/9
D. 8/11
E. None of these

Answer & Explanation

Answer: Option A
Let the fraction be [n/d] & after that it becomes [2.5n/4d]=5/18 . So we get the result as [4/9]

17 A car covers the first 30 km of its journey in 45 minutes and the remaining 25 km in 30 minutes. What is the average speed of the car?

A. 60
B. 64
C. 49
D. 48
E. None of these

Answer & Explanation

Answer: Option E
Total distance/Total time =(30+25)/[(3/4)+(1/2)]
Average Speed=44kmph

18 A function f(x) is defined as f(x) = f(x – 2) – x(x + 2) for all the integer values of x and f(1) + f(4) = 0. What is the value of f(1) + f(2) + f(3) + f(4) + f(5) + f(6)?

a. 0
b. 89
c. -89
d. None of these

Answer & Explanation

Answer: Option C
Let S = f(1) + f(2) + f(3) + f(4) + f(5) + f(6)
As f(1) + f(4) = 0, therefore S = f(2) + f(3) + f(5) + f(6) ------ (1)
f(2) = f(0) – 8
f(3) = f(1) – 15
f(4) = f(2) – 24 = f(0) – 32
f(5) = f(3) – 35 = f(1) – 50

f(6) = f(4) – 48 = f(0) – 80

Put the above values in equation (1), we get

S = f(0) – 8 + f(1) – 15 + f(1) – 50 + f(0) – 80

S = 2(f(0) + f(1)) – 153 ------ (2)

As we already know f(1) + f(4) = 0 ⇒f(1) + f(0) – 32 = 0 ⇒f(1) + f(0) = 32

Putting this value in equation 2, we get S = 2(32) – 153 = -89

So, Ans is option C.

19In ΔABC, the internal bisectors of ∠ABC and ∠ACB met at I and ∠BAC = 50°. The measure of ∠BIC is

a. 105°

b. 115°

c. 125°

d. 130°

Answer & Explanation

Answer: Option B

I is the In-centre

So, ∠BIC = 90° + 1/2 ∠BAC

= 90° + 1/2 × 50 = 115°

20The difference between [3/5] of [2/3] a number and [2/5] of[1/4] of the same number is 288. What is the number?

A. 960

B. 850

C. 895

D. 955

Answer & Explanation

Answer: Option A

Let the no. Be [3/5] x [{2/3}x]-[2/5] x [1/4]x,then = 288 Solving it we will get 960

21A, B, C and D are four consecutive odd numbers and their average is 42. What is the product of B and D?

a. 1860
b. 1890
c. 1845
d. 1677
e. None of these

Answer & Explanation

Answer: Option C
As diff. Is same so average should lie between B and C so B is 41 & C is 43 so D must be 45 as we have to find the product of B and D so it would be 1845

22The cost price of item A, Item A was sold at a profit of 10% and Item B was sold at a loss of 20%. If the respective ratio of selling price of items A and B is 11:12, what is the cost price of item B?

A. Rs.450/-
B. Rs.420/-
C. Rs.400/-
D. Rs.350/-
E. Rs.480/-

Answer & Explanation

Answer: Option A
The cost price of item B is Rs. 150/- more than the Let us assume cost price of A= X
So that Cost price of B= X+150.
SP of A= X*1.1
SP of B=(X+150)*0.8
Given that
SPA: SPB
11:12
So that 1.1X/(X+150)*0.8= 11/12

X=300

CP of B= 300+150=450

Answer is 450.

23Two trains 130 and 110 meters long are going in the same direction. The faster train takes one minute to pass the other completely. If they are moving in opposite directions, they pass each other completely in 3 seconds. Find the speed of the faster train.

A. 38 m/sec

B. 46 m/sec

C. 42 m/sec

D. 50 m/sec

Answer & Explanation

Answer: Option C

Total Distance to be travelled by both the trains

= 130 + 110 = 240m

Let 'F 'and 'S' be the speeds of fast and slow trains in m/sec. 240=60(F-S), 240= (F+S)

In the same direction , F – S = 4 m/sec .....(1)

In the opposite direction , F + S =80 m/sec.....(2)

Solving them we get F = 42 m/sec.

24A motor boat can travel at 10 km/h in still water. It travelled 91 km downstream in a river and then returned, taking altogether 20 hours. Find the rate of flow of the river.

a. 6 km/hr

b. 5 km/hr

c. 8 km/hr

d. 3 km/hr

Answer & Explanation

Answer: Option D
Given, speed of the Boat in still water (B)=10 km/hr
Let S be the speed of flow of river, then
91/(10+S) + 91/(10-S) = 20, Then going by options
91/13 - 91/7 = 20
So, S = 3 km/hr.

25The total tractor population in a state is 2,94,000, out of which 1,50,000 are made by Mahindra & Mahindra. Out of every 1,000 Mahindra tractors, 98 are red in colour, but only 5.3% of the total tractor population is red. Find the percentage of non-Mahindra tractors that are red.

A. 0.5025%
B. 0.5130%
C. 0.6125%
D. 0.6140%

Answer & Explanation

Answer: Option C
Total tractor population = 2,94,000
Mahindra & Mahindra = 1,50,000
So, Non Mahindra trucks = 1,44,000
Since out of every 1000 Mahindra tractors, 98 are red, out of 1,50,000 Mahindra tractors 14,700 are red.
5.3% of 2,94,000 = 15,582 are red tractors in all.
So non Mahindra tractors which are red
=15,582 – 14,700 = 882
Hence percentage of non Mahindra tractors that are red = 882/144,000 * 100 = 0.6125%

267% of the total quantity of wheat is lost in grinding when a country has to import 12 million tonnes, but when only $5^{1}/_{5}$ is lost, it can import 3 million tonnes. Find the quantity of wheat grown in the country.

A. 500 million tonnes

B. 400 million tonnes
C. 600 million tonnes
D. 700 million tonnes

Answer & Explanation

Answer: Option A
Difference in % of wheat lost = 7 – 26/5 = 9/5%
Difference in import = 12 – 3 = 9 million As 9/5% % of total qty of wheat = 9 million
⇒ 9x/500 = 9
⇒ x = 500 million

27A man who can swim 48 m/min in still water swims 200 m against the current and 200 m with the current. If the difference between those 2 times is 10 minutes, find the speed of the current.

A. 30 m/min
B. 29 m/min
C. 31 m/min
D. 32 m/min

Answer & Explanation

Answer: Option D
Try option & get answer as fourth option:
(200/(48 – 32)) – (200/ (48 + 32)) (12(1/2)min – 2(1/2)min)
= 10 min

28A and B run a 5 km race on a round course of 400 m. if their speed be in the ratio 5 : 4, how often does the winner pass the other on circular track?

a. 4 times
b. 3 times
c. 5 times
d. 2 times

Answer & Explanation

Answer: Option D
Total no. of round will be 5000/400 = 12.5
No. of rounds A completes to finish the race will be 12.5 and by the time B can complete only 10 rounds.
(As ratio of speed of A & B is 5 : 4. So they meet for the first time after A has finished 5 rounds and B has finished 4 rounds.)
So difference in no. of round will be = $2^{1}/_{2}$
The winner meets the other 2 times because the winner meets the other after every 2000 meters.

29 Mira's expenditure and saving are in the ratio 3:2. Her income increases by 10%. Her expenditure also increases by 12%. By how much % do her saving increase?

A. 7%
B. 9%
C. 10%
D. 13%

Answer & Explanation

Answer: Option A
Let total income be = 5
Increased income will be = 5.5
Increased expenditure will be = 3.36
Increased saving will be = 5.5 – 3.36 = 2.14
Percentage increase will be = 14/2 * 100 = 7%

30 Two vessels contain spirit of 0.5 and 0.75 concentrations. If two liters from the first vessel and three liters from the second vessel are mixed, then what will be the ratio of the spirit and the water in the resultant solution?

A. 13 : 7
B. 15 : 17

C. 7 : 17

D. 17 : 15

Answer & Explanation

Answer: Option A

Take 12, 12 liters in both mixtures which gives us

First

Spirit - 6

Water - 6

Second

Spirit - 9

Water - 3

Taking 2 liters from 1st mixture and 3 liters from 2nd mixture which gives us

First

Spirit - 1

Water - 1

Second

Spirit - 9/4

Water - 3/4

So total of sprit and water in new mixture will be =

Spirit	Water
1 + (9/4)	1 + (3/4)
13/4	7/4

Which will give 1st option as the answer.

31 Two small circular parks of diameters 16 m, 12 m are to be replaced by a bigger circular park. What would be the radius of this new park, if the new park occupies the same space as the two small parks?

A. 10

B. 20

C. 15

D. 25

Answer & Explanation

Answer: Option A

(Some of areas of 2 smaller parks = New bigger one

$\pi(8)^2 + \pi(6)^2 = \pi r^2$

$\pi[64+36] = \pi r^2$

$\pi[100 = \pi r^2$

$r = 10$

32 The length of a rectangular field is double its width, inside the field there is a square-shaped pond 8 m long. If the area of the pond is 1/8 of the field, what is the length of the field?

A. 32 m

B. 16 m

C. 64 m

D. 20 m

Answer & Explanation

Answer: Option A

Area of Pond = 64

Area of field = 64 × 8 = 512

Area of field $\Rightarrow x \cdot 2x = 512$

$\Rightarrow 2x^2 = 512 \Rightarrow x^2 = 256 \Rightarrow x = 16$

Length = 2 × 16 = 32. So A option is answer.

33 A, B and C started a business by investing Rs. 12,800/-. Rs.16,800/- and Rs. 9,600/- respectively. If after 8 months B received Rs. 13,125/- as his share of profit, what amount did C get as his share of profit?

a. Rs. 7,800/-

b. Rs. 7,150/-

c. Rs. 7,750/-

d. Rs. 8,250/-

e. Rs. 7,500/-

Answer & Explanation

Answer: Option E

Here the profit will be distributed in the ratio of their investments

i.e. 12800:16800:9600 → 16:21:12

Let 'x' be the total profit

we know that profit received by B = 13125/-

Therefore,

21 / (16+21+12) * x = 13125

Share received by C = (12 / 49) * 30625 = 7500/-

Hence, the answer is E.

$344\frac{1}{2} + (1 \div 2\frac{8}{9}) - 3\frac{1}{13} = ?$

a. $1\frac{9}{26}$

b. $2\frac{7}{13}$

c. $1\frac{11}{26}$

d. $2\frac{4}{13}$

e. $1\frac{10}{13}$

Answer & Explanation

Answer: Option E

$4\frac{1}{2} + (1 \div 2\frac{8}{9}) - 3\frac{1}{13}$

=> 9/2 + 9/26 - 40/13

=> $1\frac{10}{13}$

$35\{\sqrt{7744} * 11^2\} \div (2)^3 = (?)^3$

A. 7

B. 9

C. 11

D. 13

E. 17

Answer & Explanation

Answer: Option C

$? = [\{\sqrt{7744} * 11^2\} \div (2)^3]^{1/3}$

$[(88 * 121) / 8]^{1/3}$

$= (1331)^{1/3} = 11$

Hence the answer is option C.

36456 ÷ 24 * 38 - 958 + 364 = ?

A. 112

B. 154

C. 128

D. 136

E. 118

Answer & Explanation

Answer: Option C

Applying BODMAS

? = 456 ÷ 24 * 38 - 958 + 364

= 19 * 38 - 958 + 364

= 722 - 958 + 364

= 1086 - 958

= 128

Hence, the answer is option C.

37(34.5 × 14 × 42) ÷ 2.8 =?

A. 7150

B. 7365

C. 7245

D. 7575

E. 7335

Answer & Explanation

Answer: Option C

? = (34.5 × 14 × 42) ÷ 2.8

= 20286 / 2.8

= 7245

Hence, the answer is option C.

38($3\frac{6}{17} \div 2\frac{7}{34} - 1\frac{9}{25}$) = $(?)^2$

a. 2/5

b. 1/3

c. 4/5

d. 1/5

e. 3/5

Answer & Explanation

Answer: Option A

$(?)^2 = (3\frac{6}{17} \div 2\frac{7}{34} - 1\frac{9}{25})$

= [(57/17) / (75/34)] - 34/25

= 4/25

Therefore, ? = 2/5

Hence, answer is option A.

39-676.76 + 1237.87 + 897.34 - ? = 1294.25

A. 168.6

B. 164.2

C. 156.4

D. 172.2

E. 158.6

Answer & Explanation

Answer: Option B

Applying BODMAS

? = -676.76 + 1237.87 + 897.34 - 1294.25

= 164.2

Hence, the answer is option B.

40 Pure milk costs Rs. 16/- per liter. After adding water the milkman sells the mixture @ Rs. 15/- per liter and thereby makes a profit of 25% in what respective ratio does he mix milk with water?

A. 3 : 1

B. 4 : 3

C. 3 : 2

D. 5 : 3

E. 4 : 1

Answer & Explanation

Answer: Option A

If SP of mixture is 15/- per liter and profit is 25%, then

CP of mixture = (100/125) * 15 = 12/- liter

As 16/- is the cost of pure 1000 ml, therefore, for 12/-, the quantity of milk =

(12/16) * 1000 = 750 ml

So for 12/- per liter, the milk is 750 ml, then water will be 250 ml.

Thus, required ratio = 750:250 = 3:1

Hence answer is option A.

41 What will come in place of question mark (?) in the given question?

36 38.8 42.8 ? 54.4 62

A. 46.2

B. 46.6

C. 48.2

D. 48

E. 49

Answer & Explanation

Answer: Option B

Here the given pattern is as follows:

36 38.8 42.8 ? 54.4 62

+2.8 +4.0 +5.2 +6.4 +7.6

+1.2 +1.2 +1.2 +1.2

So ? = 42.8 + 5.2 = 48

Hence answer is option D.

42A merchant bought some goods worth Rs. 6,000/- and sold half of them at 12% profit. At what profit percent should he sell the remaining goods to make an overall profit of 18%?

A. 24%

B. 28%

C. 18%

D. 20%

E. 26%

Answer & Explanation

Answer: Option A

Let CP_T = 6000/-

Therefore, cost of half of goods CP_1= 3000/- and of other half goods = CP_2= 3000/-

So, SP_1=3000 × 1.12 = 3360/- and SP_T= 6000 × 1.18 = 7080/-

Thus, SP_2= 7080 – 3360 = 3720/-

Profit % = [(3720 - 3000) / (3000)] * 100 = 24%

Hence answer is option A