Daily Dose of Aptitude-3-07-2019

1.If each side of a square is increased by 25%, find the percentage change in its area?
a. 65.25
b. 56.25
c. 65
d. 56

2. Three houses are available in a locality. Three persons apply for the houses. Each applies for one house without consulting others. The probability that all the three apply for the same house is :
a. 2/9
b. 1/9
c. 8/9
d. 7/9

3. 8 couples (husband and wife) attend a dance show "Nach Baliye' in a popular TV channel ; A lucky draw in which 4 persons picked up for a prize is held, then the probability that there is atleast one couple will be selected is :
a. 8/39
b. 15/39
c. 12/13
d. None of these

4. Ratio of water and milk in a container is 2 : 3. If 40 liter mixture removed from the container and same quantity of milk is added to it then the ratio of water to milk becomes 1 : 4. Find the initial quantity of mixture ?
a. 75 lit
b. 80 lit
c. 85 lit
d. 90 lit

5. If 20% of a = b, then b% of 20 is the same as :
a. 4% of a
b. 6% of a
c. 8% of a
d. 10% of a

6. 405 sweets were distributed equally among children in such a way that the number of sweets received by each child is 20% of the total number of children. How many sweets did each child recieve ?
a. 9
b. 11
c. 10
d. 12

7. A boat takes 19 hours for travelling downstream from point A to point B and coming back to a point C which is at midway between A and B. If the velocity of the stream is 4 kmph and the speed of the boat in still water is 14 kmph, what is the distance between A and B ?

a. 120 km
b. 140 km
c. 160 km
d. 180 km

8. A, B and C can do a piece of work in 24 days, 30 days and 40 days respectively. They began the work together but C left 4 days before the completion of the work. In how many days was the work completed?

a. 11 days
b. 12 days
c. 13 days
d. 14 days

9. A tank has an inlet and outlet pipe. The inlet pipe fills the tank completely in 2 hours when the outlet pipe is plugged. The outlet pipe empties the tank completely in 6 hours when the inlet pipe is pluggeed. If there is a lekage also which is capable of draining out the liquid from the tank at half of the rate of outet pipe,them what is the time taken to fill the emty tank when both the pipes are opened?

a. 3 hours
b. 4 hours
c. 5 hours
d. None of these

10. Kaushalya can do a work in 20 days, while kaikeyi can do the same work in 25 days. They started the work jointly.Few days later Sumitra also joined them and thus all of them completed the whole work in 10 days. All of them were paid total Rs.700. What is the Share of Sumitra?

a. Rs.130
b.Rs.70
c.Rs.185
d.Can't be determined

Answers and Solutions

Ans 1:b

Sol: let each side of the square be a , then area = a2
As given that The side is increased by 25%, then
New side = 125a/100 = 5a/4
New area = $(5a/4)^2$
Increased area= $[25a^2/16]-a^2$
Increase %=$[9a^2/16]a^2$*100 % = 56.25%

Ans 2:b
Sol: One person can select one house out of 3= 3C1 ways =3.
Hence, three persons can select one house out of 3 in 3 x 3 x 3 =9.
Therefore, probability that all thre apply for the same house is 1/9

Ans 3: b
Sol: P(selecting atleast one couple) = 1 - P(selecting none of the couples for the prize)
= 1−[(16C1× 14C1×12C1×10C1) / 16C4]=15 / 39

Ans 4: b
Sol: From the given data,
let the initial quantity of the mixture = 5x
Then,
2x – 16 / 3x − 24 + 40 = 1 / 4
8x − 64 = 3x + 16
5x = 80
x = 16 lit
Then the initial quantity of the mixture = 5x = 5 x 16 = 80 lit.

Ans 5: a
Sol: 20% of a = b => (20/100)a = b
b% of 20 =(b/100) x 20 = (20a/100) x (1/100) x (20) = 4a/100 = 4% of a.

Ans 6: a
Sol: Let the total number of children be x.
Then, x * (20% of x) = 405
=> x * 20x/100 = 405
15x2 = 405
=> x=45
Number of sweets received by each child = 20% of 45 = 9.

Ans 7: d
Sol: Speed in downstream = (14 + 4) km/hr = 18 km/hr;
Speed in upstream = (14 – 4) km/hr = 10 km/hr.
Let the distance between A and B be x km. Then,
x/18 + (x/2)/10 = 19 ⇔ x/18 + x/20 = 19 ⇒ x = 180 km.

Ans 8: a
Sol: One day's work of A, B and C = (1/24 + 1/30 + 1/40) = 1/10.
C leaves 4 days before completion of the work, which means only A and B work during the last 4 days.
Work done by A and B together in the last 4 days = 4 (1/24 + 1/30) = 3/10.
Remaining Work = 7/10, which was done by A,B and C in the initial number of days.
Number of days required for this initial work = 7 days.
Thus, the total numbers of days required = 4 + 7 = 11 days.

Ans 9: b

Sol: Rate of leakage = 8.33% per hour

Net efficiency = 50 - (16.66 + 8.33)= 25%

Time required = 100/25 = 4 hours

Ans 10: c

Sol: Efficiency of kaushalya = 5%

Efficiency of kaikeyi = 4%

Thus, in 10 days working together they will complete only 90% of the work.

[(5+4)*10] =90

Hence, the remaining work will surely done by sumitra, which is 10%.

Thus, Sumitra will get 10% of Rs. 700, which is Rs.70.

Daily Dose of Aptitude-4-07-2019

1.A bag contains 50 P, 25 P and 10 P coins in the ratio 5: 9: 4, amounting to Rs. 206. Find the number of coins of each type respectively.

a. 360, 160, 200
b. 160, 360, 200
c. 200, 360,160
d. 200,160,300

2. In an election between two candidates, one got 55% of the total valid votes, 20% of the votes were invalid. If the total number of votes was 7500, the number of valid votes that the other candidate got, was:

a. 2500
b. 2700
c. 2900
d. 3100

3. What was the day on 15th august 1947 ?

a. Friday
b. Saturday
c. Sunday
d. Thursday

4. If each side of a square is increased by 25%, find the percentage change in its area?

a. 65.25
b. 56.25
c. 65
d. 56

5. A grocer has a sale of Rs 6435, Rs. 6927, Rs. 6855, Rs. 7230 and Rs. 6562 for 5 consecutive months. How much sale must he have in the sixth month so that he gets an average sale of Rs, 6500 ?

a. 4991
b. 5467
c. 5987
d. 6453

6. At what time between 4 and 5 o'clock will the hands of a watch point in opposite directions?

a. 54 past 4

b. (53 + 7/11) past 4

c. (54 + 8/11) past 4

d. (54 + 6/11) past 4

7. Three number are in the ratio of 3 : 4 : 5 and their L.C.M. is 2400. Their H.C.F. is:

a. 40

b. 80

c. 120

d. 200

8. If selling price is doubled, the profit triples. Find the profit percent ?

a.100%

b.200%

c.300%

d.400%

9. Two numbers are respectively 20% and 50% more than a third number. The ratio of the two numbers is:

a. 2:5

b. 3:5

c. 4:5

d. 5:4

10. If the diagonal of a rectangle is 17cm long and its perimeter is 46 cm. Find the area of the rectangle.

a. 110

b. 120

c. 130

d. 140

Answers and Solutions:

Ans 1: c

Sol: let ratio be x.

Hence no. of coins be 5x ,9x , 4x respectively

Now given total amount = Rs.206

=> (0.50)(5x) + (0.25)(9x) + (0.10)(4x) = 206

we get x = 40

=> No. of 50p coins = 200

=> No. of 25p coins = 360

=> No. of 10p coins = 160

Ans 2: b

Sol: Total number of votes = 7500

Given that 20% of Percentage votes were invalid

=> Valid votes = 80%

Total valid votes = 7500*(80/100)

1st candidate got 55% of the total valid votes.

Hence the 2nd candidate should have got 45% of the total valid votes

=> Valid votes that 2nd candidate got = total valid votes x (45/100)

=7500*(80/100)*(45/100) = 2700

Ans 3: a

Sol: 5 Aug, 1947 = (1946 years + Period from 1.1.1947 to 15.8.1947)

Odd days in 1600 years = 0

Odd days in 300 years = 1

46 years = (35 ordinary years + 11 leap years) = (35 x 1 + 11 x 2)= 57 (8 weeks + 1 day) = 1 odd day

Jan. Feb. Mar. Apr. May. Jun. Jul. Aug

(31 + 28 + 31 + 30 + 31 + 30 + 31 + 15) = 227 days = (32 weeks + 3 days) = 3 odd days.

Total number of odd days = (0 + 1 + 1 + 3) = 5 odd days.

Hence, as the number of odd days = 5 , given day is Friday.

Ans 4: b

Sol: let each side of the square be a , then area = a^2

As given that The side is increased by 25%, then

New side = 125a/100 = 5a/4

New area = $(5a/4)^2$

Increased area= $25a^2/16-a^2$

Increase %=$\{[9a^2/16]/a^2\}$*100 % = 56.25%

Ans 5: a

Sol: Total sale for 5 months = Rs. (6435 + 6927 + 6855 + 7230 + 6562) = Rs. 34009.

Required sale = Rs.[(6500 x 6) - 34009]

= Rs. (39000 - 34009)

= Rs. 4991.

Ans 6: d

Sol: 4 o'clock, the hands of the watch are 20 min. spaces apart.

To be in opposite directions, they must be 30 min. spaces apart.

Minute hand will have to gain 50 min. spaces.

55 min. spaces are gained in 60 min

50 min. spaces are gained in (60/55)×50 min. or 54(6/11)

Required time = 54(6/11) min. past 4.

Ans 7: a

Sol: Let the numbers be 3x, 4x and 5x.

Then, their L.C.M. = 60x.

So, 60x = 2400 or x = 40.

The numbers are (3 x 40), (4 x 40) and (5 x 40).

Hence, required H.C.F. = 40.

Ans 8: a

Sol: Let the C.P be Rs.100 and S.P be Rs.x, Then

The profit is (x-100)

Now the S.P is doubled, then the new S.P is 2x

New profit is (2x-100)

Now as per the given condition;

=> 3(x-100) = 2x-100

By solving, we get

x = 200

Then the Profit percent = (200-100)/100 = 100

Hence the profit percentage is 100%

Ans 9: c

Sol: Let the third number be x.

Then, first number = 120% of x =120x/100 = 6x/5

Second number =150% of x = 150x/100 = 3x/2

Ratio of first two numbers = 6x/5 : 3x/2 = 12x : 15x = 4 : 5

Ans 10: b

Sol: let length = x and breadth = y then

$2(x+y) = 46 \quad \Rightarrow \quad x+y = 23$

$x^2+y^2 = 17^2 = 289$

now $(x+y)^2 = 23^2$

$\Rightarrow x^2+y^2+2xy = 529$

$\Rightarrow 289+ 2xy = 529$

$\Rightarrow xy = 120$

area = xy = 120 sq.cm

Daily Dose of Aptitude-5-07-2019

1.The average of 7 consecutive numbers is 20. The largest of these numbers is :

a. 22
b. 21
c. 23
d. 24

2. The greatest number which on dividing 1657 and 2037 leaves remainders 6 and 5 respectively, is:

a. 123
b. 127
c. 235
d. 305

3. A mixture contains alcohol and water in the ratio 4 : 3. If 5 liters of water is added to the mixture, the ratio becomes 4: 5. Find the quantity of alcohol in the given mixture.

a. 15
b. 18
c. 10
d. 12

4. A, B, C started a business with their investments in the ratio 1:3 :5. After 4 months, A invested the same amount as before and B as well as C withdrew half of their investments. The ratio of their profits at the end of the year is :

a. 1 : 2 : 3
b. 3 : 5 : 10
c. 3 : 4 : 15
d. 5 : 6 : 10

5. Gaurav spends 30% of his monthly income on food articles, 40% of the remaining on conveyance and clothes and saves 50% of the remaining. If his monthly salary is Rs. 18,400, how much money does he save every month ?

a. 3864
b. 4903
c. 5849
d. 6789

6. What was the day of the week on 28th May, 2006?

a. Sunday
b. Friday
c. Wednesday
d. Tuesday

7. In a lottery, there are 10 prizes and 25 blanks. A lottery is drawn at random. What is the probability of getting a prize?

a. 2/7
b. 5/7
c. 1/5
d.1/2

8. Find compound interest on Rs. 8000 at 15% per annum for 2 years 4 months, compounded annually.

a. 2109
b. 6109
c. 3109
d. 4109

9. In a 100 m race, A beats B by 10 m and C by 13 m. In a race of 180 m, B will beat C by:

a. 5.4m
b. 4.5m
c. 5m
d. 6m

10. Salaries of Ravi and Sumit are in the ratio 2:3. If the salary of each is increased by Rs. 4000, the new ratio becomes 40:57. What is Sumit's salary?

a. 38000
b. 46800
c. 36700
d. 50000

Answers and Solutions

Ans 1: c

Sol: Let the numbers be x, x + 1, x + 2, x + 3, x + 4, x + 5 and x + 6,
Then (x + (x + 1) + (x + 2) + (x + 3) + (x + 4) + (x + 5) + (x + 6)) / 7 = 20.
or 7x + 21 = 140 or 7x = 119 or x =17.
Latest number = x + 6 = 23.

Ans 2: b

Sol: Required number = H.C.F. of (1657 - 6) and (2037 - 5)
= H.C.F. of 1651 and 2032 = 127.

Ans 3: c
Sol: Let the quantity of alcohol and water be 4x litres and 3x litres respectively
4x/(3x+5) = 4/5
20x = 4(3x+5)
8x = 20
x = 2.5
Quantity of alcohol = (4 x 2.5) litres = 10 litres.

Ans 4: d
Sol: Let their initial investments be x, 3x and 5x respectively. Then,
A:B:C = (x*4+2x*8) : (3x*4+(3x/2)*8) : (5x*4+(5x/2)*8)
20x : 24x : 40x = 5 : 6 : 10

Ans 5: a
Sol: Saving = 50% of (100 - 40)% of (100 - 30)% of Rs. 18,400 = Rs. (50/100 * 60/100 * 70/100 * 18400) = Rs. 3864.

Ans 6: a
Sol: 28 May, 2006 = (2005 years + Period from 1.1.2006 to 28.5.2006)
Odd days in 1600 years = 0
Odd days in 400 years = 0
5 years = (4 ordinary years + 1 leap year) = (4 x 1 + 1 x 2) = 6 odd days
(31[jan] + 28 [Feb]+ 31[Mar] + 30[April] + 28[May]) = 148 days = (21 weeks + 1 day) = 1 odd day.
Total number of odd days = (0 + 0 + 6 + 1) = 7 = 0 odd days.
Given day is Sunday.

Ans 7: a
Sol: Total number of outcomes possible, n(S) = 10 + 25 = 35
Total number of prizes, n(E) = 10
P(E)=n(E)/n(S)=10/35=2/7

Ans 8: c
Sol: Time = 2 years 4 months = 2(4/12) years = 2(1/3) years.
Amount = Rs'. [8000 X (1+(15/100))^2 X (1+((1/3)*15)/100)]
=Rs. [8000 * (23/20) * (23/20) * (21/20)]
= Rs. 11109. .
:. C.I. = Rs. (11109 - 8000) = Rs. 3109.

Ans 9: d
Sol: A : B = 100 : 90.
A : C = 100 : 87.
B/C = (B/A*A/C) = (90/100*100/87) = 30/29
When B runs 30 m, C runs 29 m.
When B runs 180 m, C runs (29/30*180)m =174m
B beats C by (180 - 174) m = 6 m.

Ans 10: a

Sol: Let the original salaries of Ravi and Sumit be Rs. 2x and Rs. 3x respectively.

Then,

(2x+4000) / (3x+4000) = 40 / 57

⇒ 57 × (2x + 4000) = 40 × (3x+4000)

⇒ 6x = 68,000

⇒ 3x = 34,000

Sumit's present salary = (3x + 4000) = Rs.(34000 + 4000) = Rs. 38,000

Daily Dose of Aptitude-06-07-2019

1. In how many different ways can the letters of the word 'LEADING' be arranged in such a way that the vowels always come together?

a. 720
b. 520
c. 700
d. 750

2. A clock is set right at 5 a.m. The clock loses 16 minutes in 24 hours.What will be the true time when the clock indicates 10 p.m. on 4th day?

a. 11pm
b. 12pm
c. 1pm
d. 2pm

3. A parallelogram has sides 30m and 14m and one of its diagonals is 40m long. Then its area is

a. 136
b. 236
c. 336
d. 436

4. A rectangular courtyard 3.78 meters long 5.25 meters wide is to be paved exactly with square tiles, all of the same size. what is the largest size of the tile which could be used for the purpose?

a. 14 cms
b. 21 cms
c. 42 cms
d. None of these

5. The speed of a car increases by 2 kms after every one hour. If the distance travelling in the first one hour was 35 kms. what was the total distance travelled in 12 hours?

a. 456 kms
b. 482 kms
c. 552 kms
d. 556 km

6. If the cost price of 12 pens is equal to the selling price of 8 pens, the gain percent is ?

a. 12%
b. 30%
c. 50%
d. 60%

7. P can complete a work in 12 days working 8 hours a day.Q can complete the same work in 8 days working 10 hours a day. If both p and Q work together,working 8 hours a day,in how many days can they complete the work?

a. 60/11
b. 61/11
c. 71/11
d. 72/11

8. A pupil's marks were wrongly entered as 83 instead of 63. Due to that the average marks for the class got increased by half. The number of pupils in the class is :

a. 45
b. 40
c. 39
d. 37

9. Find the angle between the hour hand and the minute hand of a clock when the time is 3.25

a. 47.5 degrees
b. 57.5 degrees
c. 45.5 degrees
d. 55.5 degrees

10. Two bus tickets from city A to B and three tickets from city A to C cost Rs. 77 but three tickets from city A to B and two tickets from city A to C cost Rs. 73. What are the fares for cities B and C from A ?

a. Rs. 4, Rs. 23
b. Rs. 13, Rs. 17
c. Rs. 15, Rs. 14
d. Rs. 17, Rs. 13

Answers and Solutions

Ans 1: a

Sol: The word 'LEADING' has 7 different letters.
When the vowels EAI are always together, they can be supposed to form one letter.
Then, we have to arrange the letters LNDG (EAI).
Now, 5 (4 + 1) letters can be arranged in 5! = 120 ways.
The vowels (EAI) can be arranged among themselves in 3! = 6 ways.
Required number of ways = (120 x 6) = 720.

Ans 2: a

Sol: Time from 5 am. on a day to 10 pm. on 4th day = 89 hours.

Now 23 hrs 44 min. of this clock = 24 hours of correct clock.

356/15 hrs of this clock = 24 hours of correct clock

89 hrs of this clock = (24 x 31556 x 89) hrs of correct clock.

= 90 hrs of correct clock.

So, the correct time is 11 p.m.

Ans 3: c

Sol: let ABCD be the given parallelogram

Area of parallelogram ABCD = 2 x (area of triangle ABC) now a = 30m, b = 14m and c = 40m

s=1/2 x (30+14+40) = 42

Area of triangle ABC= $\sqrt{[s(s-a)(s-b)(s-c)]}$

= $\sqrt{[42(12)(28)(2)]}$

=168 sq m

=area of parallelogram ABCD = 2 x 168 = 336 sq m

Ans 4: b

Sol: 3.78 meters =378 cm = 2 × 3 × 3 × 3 × 7

5.25 meters=525 cm = 5 × 5 × 3 × 7

Hence common factors are 3 and 7

Hence LCM = 3 × 7 = 21

Hence largest size of square tiles that can be paved exactly with square tiles is 21 cm.

Ans 5: c

Sol: Total distance travelled in 12 hours =(35+37+39+.....upto 12 terms)

This is an A.P with first term, a=35, number of terms,

n= 12,d=2.

Required distance = 12/2[2 x 35+{12-1) x 2]

=6(70+22)

= 552 kms.

Ans 6: c

Sol: Let the cost price of 1 pen is Re 1

Cost of 8 pens = Rs 8

Selling price of 8 pens = 12

Gain = 12 - 8 = 4

Gain% = (gain / cost × 100)% = (4 / 8×100)% = 50%

Ans 7: a
Sol: P can complete the work in (12 x 8) hrs = 96 hrs
Q can complete the work in (8 x 10) hrs=80 hrs
Therefore, P's 1 hour work=1/96 and Q's 1 hour work= 1/80
(P+Q)'s 1 hour's work =(1/96) + (1/80) = 11/480. So both P and Q will finish the work in 480/11 hrs
Therefore, Number of days of 8 hours each = (480/11) x (1/8) = 60/11

Ans 8: b
Sol: Let there be x pupils in the class.
Total increase in marks = (x * 1/2) = x/2.
x/2 = (83 - 63) => x/2 = 20 => x = 40

Ans 9: a
Sol: At 3 O'clock, Minute hand is at 12 while the Hour hand is at 3. Again the minute hand has to sweep through (30 x 5) ie 150° for reaching the figure 5 to show 25 mins.
Simultaneously the Hour hand will also rotate for 25 mins. Thus starting from the mark, 3 the hour hand will cover an angle = (25 x 30) / 60 = 12.5°
Hence, Angle between Hour and the Minute hand = (60 - 12.5) = 47.5°

Ans 10: b
Sol: Let Rs. x be the fare of city B from city A and Rs. y be the fare of city C from city A.
Then, 2x + 3y = 77 ...(i) and
3x + 2y = 73 ...(ii)
Multiplying (i) by 3 and (ii) by 2 and subtracting, we get: 5y = 85 or y = 17.
Putting y = 17 in (i), we get: x = 13.