“Recent Bank Written Math View 2018”
“Phase 1”

Solution, Edited and Completed
BY
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Banking Career in Bangladesh

#Recent_Written_Math_View_2018
#Dhaka_Bank_Cash_2018
#Exam_Taker: Business Studies,DU

Question-01: A depositor deposited 4000 at x% and 5000 at y% and earned 320 as interest. if he could deposit 5000 at x% and 4000 at y% then he would earn 310. what is value of x and y.
Solution:
According to the question,
4000× x/100+5000×y/100=320
40x+50y=320
Or, 4x+5y=32----------(1)
In the same way
(5000*x)/100+(4000*y)/100=310
Or, 5x+4y=31----------(2)
By doing (1)*5-(2)*4=»
20x+25y=160
20x+16y=124

Or, 9y=36
Or,y=4
Putting value of y in equation (1)
4x + 5*4=32
Or, x=3
So the value of (x,y)=(3,4)
Ans: (3,4)

Question-2:Selling 12 candies at a price of tk 10 yields a loss of x% and selling 12 candies at a price of tk 12 yields a profit of x% ..What is the value of x ? [South East Bank PO-2017]
Solution:

Let,
12 candies cost price= Tk 100

x% loss selling price=(100-x)
Selling price(100-x) then cp 100 tk
sp 10. " {(100*10)/(100-x)}

x% profit selling price=(100+x) tk
Selling price tk(100+x) then cp tk100
Sp. 12. " {(100*12)/(100+x)}

According to the question,
{(100*10)/(100-x)}={(100*12)/(100+x)}
Or, x=9.09
So,the value of X is 9.09
Answer: 9.09

#Recent_Written_Bank_Math_View_2018
#BDBL_SENIOR_OFFICER_2018
#Exam_Taker: Arts Faculty,DU

Question-1:The profit of a company is given in Taka by $P = 3x^2-35x+50$, where x is the amount in Taka spent on advertising. For what values of x does the company make a profit?
Solution:
Here,
$P=3x^2 - 35x + 50$
Now, if the company makes profit, then $P>0$
So,
$3x^2 - 35x + 50 > 0$
$=> 3x^2 - 30x – 5x + 50 > 0$
$=> 3x(x-10) – 5(x-10) > 0$
$=> (x-10)(3x-5) > 0$----------(1)
As this equation(1) is greater than 0,So the value of the two roots must have different values in different intervals.
Now,the equation(1),we have
$x>10$
Or, the value of x less than 5/3 and greater than or equal to 0
i.e . $0 \le x<5/3$,Because advertising cost can not be negative
So, the company makes a profit,the values of $x=\{0 \le x<5/3$ or ,$x>10\}$

Answer: $x=\{0 \le x<5/3$ or ,$x>10\}$

Question-2:An amount of Tk. 7200 is spent to cover the floor of a room by carpet. An amount of Tk. 576 would be saved if the breadth were 3 meters less. What is the breadth of the room?
(একটা কামরার মেঝে কার্পেট দিয়ে মুড়তে ৭২০০ টাকা খরচ হয়। কামরাটির প্রস্থ ৩ মিটার কম হলে খরচ হত ৫৭৬ টাকা। কামরাটির প্রস্থ কত ?)

সমাধান:
মনে করি, দৈর্ঘ্য x মি. , প্রস্থ y মি
প্রতি বর্গ মি খরচ হবে z টাকা
প্রশ্নমতে,
xyz=৭২০০--------(১)

xz(y-৩)=৭২০০-৫৭৬

=৬৬২৪-----(২)

সমীকরন(১) কে (২) নং দিয়ে ভাগ করে=>

xyz/xz(y-৩)=৭২০০/৬৬২৪

বা, y=৩৭.৫

উ :৩৭.৫ মি

অথবা:
৫৭৬ টাকাকম খরচ হয় ৩ মিটার এ

১ টাকাকম খরচ হয় ৩ ÷৫৭৬

৭২০০ টাকাকম খরচ হয় (৩ *৭২০০)÷৫৭৬ মিটার

=৩৭.৫ মিটার

উ :৩৭.৫ মি

Question-3:Find the three digit prime number whose sum of the digits is 11 and each digit representing a prime number. Justify your answer.
Solution:

Since the sum of the 3 digits is 11 and each digit represents a prime number,
So, the number less than 11 .
And the 3 digits may be 2,2,7 or 3,3,5
Because 2+2+7=11 and 3+3+5=11
Now using the digit 2,2,7 we have prime number 227 .Because other two numbers i.e. 722 and 272 are divisible by 2 and thus are not prime
Similarly 353 is prime number other two numbers 533 & 335 is not prime number

In case of 227, sum of the digits is 2+2+7 = 11.
And 2, 2, 7 all the digits are prime.

Similarly, In case of 353, sum of the digits is 3+5+3 = 11.
And 3, 5, 3 all the digits are prime.
Answer: 227 & 353

Question-4: If a/(q-r) = b/(r-p)=c/(p-q) then show that, a+b+c = pa+qb+rc
Solution:
Let,
a/(q-r) = b/(r-p) = c/(p-q) = k
So, a = k(q-r);
b = k(r-p);
and c = k(p-q)
Now,

L.H.S. =>
a+b+c = k(q-r)+ k(r-p)+ k(p-q)
= k(q-r+r-p+p-q)
= k x 0 = 0
And,
R.H.S. =>
pa+qb+rc = p*k(q-r)+ q*k(r-p)+ r*k(p-q)
= kpq-kpr+kqr-kpq+kpr-kqr
= 0
So, L.H.S. = R.H.S. (Showed)

Question-5:Prove that a cyclic parallelogram must be a rectangle.
Solution:

see Alternative solution Image
Let ABCD be the cyclic parallelogram
Prove that, ABCD is a rectangle
Since ABCD is a parallelogram
<A = <C -------(1)
And, <A+<C = 180°
since A = C
So, <A+<A = 180°
Or, 2<A = 180°
Or, <A = 90°
if any one angle of parallelogram is 90°, the parallelogram is a rectangle.

Question-6:After traveling 108 km, a cyclist observed that he would have required 3 hrs less if he could have traveled at a speed 3 km/hr more. At what speed did he travel?
Solution:
Let,
The speed be x km/hr
According to the question,
(108/x)-{108/(x+3)}=3
Or,(x-9)(x+12)=0
So,
x=9
x=-12[It is not acceptable]
Answer: 9 km/hr

Question-7:Solve: x/2 + 6/y = 9;x/3 + 2/y=4

Solution:
x/2 + 6/y=9----------(1)
x/3 + 2/y=4----------(2)

(ii) x 3 – (i)=»
=> x – x/2 = 3
=> x/2 = 3
=> x = 6
From (i) => 6/2 + 6/y = 9
=> 6/y = 6
Y = 1
Ans. (x, y) = (6, 1)

#Recent_Written_Bank_Math_View_2018
#Uttara_Bank_Assistant_Officer_Cash_2018
#Exam_Taker: Social Science ,DU

Question-01:Anik visited his cousin Rowhan during the summer vacation. In the mornings, they both would go for swimming. In the evenings, they would play tennis. They would engage in at most one activity per day, i.e. either they went swimming or played tennis each day. There were days when they took rest and stayed home all day long. There were 32 mornings when they did nothing, 18 evenings when they stayed at home, and a total of 28 days when they swam or played tennis. What duration of the summer vacation did Anik stay with Rowhan? [Uttara Bank Assistant officer Cash-2018]

Solution:
Let
The duration of Anik's vacation be n days.
Given that
On each day, he had engaged in exactly one of swimming and tennis,
Also given that he was free on 32 mornings and
On 18 evenings and on total 28 days he either went for swimming or tennis.
So,
He was busy on (n−32)mornings
And (n−18) evenings
Now we can write,
(n−32)+(n−18)=28
Or, 2n =28+32+18
Or, n=39

So,39 day's summer vacation did Anik stay with Rowhan
Answer: 39 day's

Question-02:In a three digit number the number in unit place is 75% of tenth digit number, the tenth digit number is greater than hundred digit by 1 & their sum will be 15, find out the number? [Uttara Bank Assistant Officer Cash-2018]
Solution:

Let,
Tenth digit be=y
Unit's digit= 75% of y=3y/4
Hundred's digit=y-1
So,
The number be
=100(y-1)+10y+3y/4
=100y-100+10y+3y/4
=(443y-400)/4.....(i)
Now From Question,
y-1+y=15
or,2y=16
or,y=8
Putting the value of y=8 in equation(i)
(443*8-400)/4
=(3544-400)/4
=(3144/4)
=786
Hence,the required number is 786

Answer:786
Solution-2:
Let,
Unit digit=x
Tenth=y
And,
Hundred=z
So,
Original number=100z+10y+x
From question condition,
x= 75% of y=3/4*y-------(i)
And,
y=z+1---------(ii)
Again from question,
y+z=15
Or,2z+1=15
Or,z=7
From equation(ii)
y=8
From (i)
& x=3/4*8=6
So,
Required number=7*100+8*10+6
=786.

Ans:786

#Recent_Written_Bank_Math_View_2018
#Agrani_Bank_Officer_Cash_2018
#Exam_Taker : Arts Faculty, DU

Question-1:A novelist earned Tk. 100,000 from royalties on her book. She paid 20% income tax on the royalties. She invested Tk. 50,000 at one rate and the rest at a rate that was 1% lower, earning 6,100 taka annual interest on the two investments. What was the lower rate?
Solution:
Given that
Total income = 100000 tk
After 20% tax then his net salary
=100000*80%
=80000 tk

Let,
He invested tk 50000 at r %
and
tk 30000 invested at (r-1)%

According to the question,
{50000*r/100}+{30000*(r-1)/100}= 6100
Or, 500r+300(r-1)=6100
Or, 100(5r+3(r-1)) =61*100
Or, 5r+3r-3=61
Or, 8r =64
Or, r= 8
So higher rate was =8 %
So lower rate was =8-1=7%
Answer: 7%

Question-2:A working couple earned a total of Tk. 43, 520. The wife earned Tk. 640 per day, the husband earned Tk .551 per day. lf the total number of days worked by both was 72, formulate a system of equation and solve the system to find the number of days worked by
Solution:
Given that,
Per day income of Wife=640 tk
And,
Husband=560 tk
Let,
Wife work for x days
and husband work (72-x)days.
According to the question,
640*x+560*(72-x)=43520
Or,640x+40320-560x=43520
Or, 80x=43520-40320
Or, 80x=3200
Or, x=3200/80

Or x=40
So wife work 40 hours
and
husbands = 72-40=32 hours

Answer: 40 hours and 32 hours

Question-3:A man's salary in 2015 was tk 20,000 per annum and it increased by 10% each year. Find how much he earned in the years 2015 to 2017 inclusive.
Solution:

Given that,
In 2015 his initial salary was= 20000 tk
And Also given that,Each year his annual salary increased by 10%
So, In 2016 his salary was
=20000*110/100
=22000 tk

In 2017 his salary was ,
=22000*110/100
=24200 tk

So total earned by him from 2015 to 2017 inclusive
= 20000+22000+24200
=66200 tk

Answer: 66200 tk

Question-4: Prove that the sum of the odd numbers from 1 to 125 inclusive is equal to the sum of the odd numbers from 169 to 209 inclusive.
Solution:

1 to 125 is a arithmetic series
1+3+5+7……+125
Here,
a=1
d=3-1=2
So,In arithmetic series n th term is
a+(n-1)d=125
or, 1+(n-1)*2=125
or, 1+2n-2=125
or, 2n=126
or, n=63

So, sum of the arithmetic series
= (1st term +last term)*n/2
=(1+125)*63/2
=63*63
=3969

Similarly,
169+171+173……..+209

It is a arithmetic series,
a=169
d=171-169=2
So,In arithmetic series n th term is
or,169+(n-1)*2=209
or, 2n-2=209-169
or, 2n=40+2
or n=42/2
=21
So, sum of the arithmetic series
=(169+209)*21/2
=378*21/2
=189*21
=3969

So,
1+3+5+7……+125=169+171+173……..+209=3969 (Proved)

Question-5:a=xy^(p-1),b=xy^(q-1) ,c=xy^(r-1) and p+q+r=3,then proved that,a^(q-r).b^(r-p).c^(p-q)=1
Solution: Try yourself

Question-6: Solve the equation, x/2 + y/3 = 1 and x/3 + y/2 = 1

x/2 + y/3 = 1……(i)
x/3 + y/2 = 1……..(ii)

Now multiply equation (i) by 1/2 and equation (ii)by 1/3 and subtract
x/4 + y/6 = 1/2
x/9 +y/6 =1/3 ……
x/4 –x/9 =1/2 – 1/3
or 5x/36=1/6
or 30x =36
or x=36/30
or x=6/5

And substituting x value in equation (1) we get
6/5*2 + y/3 =1
Or y/3 =1-6/10
Or y/3 =4/10
Or y/3 =2/5
Or 5y=6
Or y =6/5
Answer : 6/5 and 6/5

Question-7: A hemisphere and a right circular cone on equal bases are of equal height. Find the ratio of their volumes.
Solution:
Let,

Base of hemisphere= height of cone= r
We know that,
Volume of hemisphere = 2/3 π r3
Volume of cone= 1/3 π r2h
=1/3 π r3 (because r= h)
So,Ratio of the hemisphere & Cone's Volume
= 2/3πr3 : 1/3πr3
= 2:1
Answer: 2:1

#Recent_Bank_Written_Math_View_2018
#BKB_CASH_OFFICER_2018
#Exam_Taker:Arts Faculty,DU

Question-1:The sum of three numbers in an Arithmetic Progression is 30. The sum of their squares is 318. Find the numbers.
Solution:
Let ,
The 2nd term is a
and common difference is d
So ,
1st term be =a-d
2nd term be=a
3rd term be =a+d
According to the question,
a-d+a+a+d=30
=» 3a=30
=» a=10
So,we can write,
2nd term is 10
1st term=10-d
and
3rd term=10+d
Again,
(10-d)^2+10^2+(10+d)^2=318
=»100-20d+d^2+100+100+20d+d^2=318
=»d=3
So,
1st term=10-3=7 2nd term=10 and 3rd term=10+3=13
answer: 7, 10,13

Question-2:Among 50 people, 35 can speak English , 25 can both English and Bangla, and each can speak at least one of the two language . how many speak only bangla?

Solution:
Given that,
Total people=50
Speak English=35

Speak both Bangla & English=25
Only English speak =(35-25)=10
Bangla speak =(50-10)=40
Only Bangla speak(40-25)=15
Answer:15

Alternative:
Total=All single -Both+none
Or,50=35+B-25+0
or, B=40
So total 40 speak bangla.
speak only bangla=40-25=15
Answer:15

Question-3: 64x^3 -9ax^2+108x-b. what is the value of a and b for making it perfect cube.
Solution:
Given that,
64x^3 -9ax^2+108x-b
we know the formula for perfect cube
(p-q)^3=p^3-3.p^2.q+3.p.q^2-q^3
so (4x)^3-3.(4x)^2.q+3.4x.3^2 - q^3.
or in the 3rd term we see 3.4x.3^2
that means here q^2=3^2
so q=3
And, (4x)^3-3.(4x)^2.3+3.4x.3^2 - 3^3
Or, 64x^3 - 3.3.16x^2+108x-27
So a=16 and b=27

Answer: 16 and 27

Question-4:The Length of each side of an isosceles triangle is 10 cm and the included angle between those two sides is 45 .Find the area of the triangle.
We know that,
Sin 45°= perpendicular/hypotenuse
1/√2 = x/10
x= 10/√2

Then
Area of triangle = 1/2*b*h
= 1/2*10*10/√2
=50/√2
=50*√2/√2*√2(both side multiply root 2)
=50*√2/2
=25√2
Ans: 25√2

Question-5: Price of 3 tables and 5 chairs is 2000 tk. Price of 5 table and 7 chairs is 3200 tk. What is the price of 1 table and 1 chair?
Solution:

Let,
Cost price of 1 table be x
And
Cost price of 1 chair be y
3x+5y =2000……..(i)
5x+7y =3200……..(ii)

(i)*5 -(ii)*3=»
15x+25y=10000
15x+21y=9600
……
Or,o 4y=400
or,y=100 tk

So,
3x+5*100=2000
Or 3x=2000-500
or 3x=1500
or x=500

Answer: The cost of 1 table is tk 500 and 1 chair is 100 tk and total 600 tk

Question-6:A committee consist of 3 members. If there are 7 men and 5 women available to serve on the committee. How many different committee can be formed?
Solution:
Total committee member should be selected =3
men=7 and women=5
so the combintions can be:
(I) 7c3*5c0=35
(Ii) 7c2*5c1=21*5=105
(Iii)7c1*5c2=7*10=70
(Iv)7c0*5c3=1*10=10
so total no of committe will be=35+105+70+10=220
Answer:220

Question-7:A and B started a business with the capital 3000 and 4000 tk. After 8 months, A invested tk 2500 more in the business and 7 months after, total profit 980 tk. Find the share of each.

Solution:
Total business duration (8+7)=15 months.

So, A's time equivalent investment of 1 month
={3000*8+(3000+2500)*7=24000+38500}
=62500 tk
And
B's investment=4000*15=60000 tk

Now,their investment ratio A: B
=62500:60000
=25:24
Since,
A get profit=980*25/49=500 tk
and B get profit=980*24/49=480 tk
Answer: 500 and 480 tk

Question-8:Resolve into factors:a^2+1/a^2+2-2a-2/a
Solution:
a^2+1/a^2+2-2a-2/a
=(a+1/a)^2-2a.1/a+2-2(a+1/a)
=(a+1/a)^2-2+2-2(a+1/a)
=(a+1/a)^2-2(a+1/a)
=(a+1/a)(a+1/a-2)
Answer: (a+1/a)(a+1/a-2)

#Recent_Written_Math_View_2018
#ABL_SO(Auditor)_2018
#Exam_Taker: Arts Faculty,DU

Question-1:In a survey at an airport,55 said that last year they had been to Spain,53 to France and 79 to Germany,18 had been to Spain and France ,17 to Spain and Germany,while 10 had to all three countries.How many travelers took part in the Survey?[Agrani Bank SO (Auditor) Written-2018]

Solution:
Let ,
The Number of people who travelled to Spain=n(A)
The Number of people who travelled to France=n(B)
And
The Number of people who travelled to Germany=n(C)
Given that,
n(A)=55
n(B)=53
n(C)=79
n(A^B) = 18
n(A^C)=17
and
n(A^B^ C)=10
We know that
n(U)= n(A)+ n(B)+n(C)-n(A^B) - n(A^C)-n(B^C)+n(A^B^C)
Or,n(U)=55+53+79-18-17-0+10
Or,n(U)=162
Hence, 162 members took part in the survey
Answer:162

Short cut:
Total=S+F+G-sum of two group overlap+all three+none
Total=55+53+79-18-17-0+10
=162
Answer: 162

Question-2:A shopkeeper sells two shirt at the same price.He makes 10% profit on one and losses 10% on the other.How much percentage does he gain or lose?
[Agrani Bank SO (Auditor) Written-2018]
Solution :

Let,
Selling price of first & Second shirt be =tk 100
First case,
10% profit on CP
SO,
CP + CP Of 10%=100
Or, CP=1000/11
Second case,
10% loss on CP
CP - CP of 10%=100
Or, CP =1000/9
Total Cost price=(1000/11)+(1000/9)
=202.02 tk
Total Selling price=(100+100)=200 tk
Loss=CP-SP=202.2-200=2.02
Loss percentage
=(2.02*100)/202.02
=1%
Alternative for MCQ:
By applying effective rate:
=10-10-(10*10/100)
=1% loss

Another Alternative:
In the case where loss and gain percentage is common on same selling price, always a loss incurs in total deal. And this can be calculated by a short-cut:
Loss on total deal,
= (Common loss or gain percentage /10)2= (10/10)2
= 1%

Question-3:Find the HCF of
$x^3 - 16x$, $2x^3 + 9x^2 + 4x$,
$2x^3 + x^2 - 28x$
Solution:
First case,
x^3-16x
$=x(x^2-16)$
$=x(x-4)(x+4)$

Second case,
2x^3+9x^2+9x
=x(2x^2+9x+4)
=x(x+4)(2x+1)

3rd case,
(2x^3)-x^2-28x
=x(2x^2 - x +28)
=x(x+4)(2x-7)

Hence, LFC of these factors
=x(x+4)
Answer: x(x+4)

Question-4:The length of a tangent(স্পর্শক)from a point A at distance 5 cm from the centre of the circle is 4 cm.Find the radius of the circle. [Agrani Bank SO (Auditor) Written-2018]
[এই অংকটি বুঝার জন্য চিত্র আবশ্যক]

Solution:
Let,
Radius of the circle be=r
r^2=(5^2)-(4^2)
Or, r^2=9
Or, r=3
So, Radius of circle be 3 cm
Answer 🙂 cm

Question-5 : Simplify: (5x+2)/(x^2 -x-20)+(2x-1)/(x^2 -4x-5)

[Agrani Bank SO (Auditor) Written-2018
Answer : (7x^2+14x-2)/(x-5)(x+4)(x+1)

Try Yourself

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#Dhaka_Bank_Cash_2018

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#BDBL_SENIOR_OFFICER_2018

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#Exam_Taker: Social Science ,DU

Question-01:Anik visited his cousin Rowhan during the summer vacation. In the mornings, they both would go for swimming. In the evenings, they would play tennis. They would engage in at most one activity per day, i.e. either they went swimming or played tennis each day. There were days when they took rest and stayed home all day long. There were 32 mornings when they did nothing, 18 evenings when they stayed at home, and a total of 28 days when they swam or played tennis. What duration of the summer vacation did Anik stay with Rowhan? [Uttara Bank Assistant officer Cash-2018]

Question-02:In a three digit number the number in unit place is 75% of tenth digit number, the tenth digit number is greater than hundred digit by 1 & their sum will be 15, find out the number? [Uttara Bank Assistant Officer Cash-2018]

#Recent_Written_Bank_Math_View_2018
#Agrani_Bank_Officer_Cash_2018
#Exam_Taker : Arts Faculty, DU

Question-1:A novelist earned Tk. 100,000 from royalties on her book. She paid 20% income tax on the royalties. She invested Tk. 50,000 at one rate and the rest at a rate that was 1% lower, earning 6,100 taka annual interest on the two investments. What was the lower rate?

Question-2:A working couple earned a total of Tk. 43, 520. The wife earned Tk. 640 per day, the husband earned Tk .551 per day. lf the total number of days worked by both was 72, formulate a system of equation and solve the system to find the number of days worked by

Question-3:A man's salary in 2015 was tk 20,000 per annum and it increased by 10% each year. Find how much he earned in the years 2015 to 2017 inclusive.

Question-4: Prove that the sum of the odd numbers from 1 to 125 inclusive is equal to the sum of the odd numbers from 169 to 209 inclusive.

Question-5:a=xy^(p-1),b=xy^(q-1) ,c=xy^(r-1) and p+q+r=3,then proved that,a^(q-r).b^(r-p).c^(p-q)=1

Question-6: Solve the equation, x/2 + y/3 = 1 and x/3 + y/2 = 1

Question-7: A hemisphere and a right circular cone on equal bases are of equal height. Find the ratio of their volum

Question:A alone can do a piece of work in 20 days, while B alone can do it in 30 days and C alone can do it in 60 days.If in every third day B in every fourth day C help A in doing the work ,how many days will be required to complete the whole work?

[ক একটি কাজ ২০ দিনে,খ ৩০ দিনে এবং গ ৩০ দিনে করতে পারে। প্রতি ৩য় দিনে খ এবং প্রতি ৪র্থ দিনে গ ,ক কে সাহায্য করলে ঐ কাজ টি কত দিনে শেষ হবে?]

[34 & 32 th BCS Written Exam]

Solution:

Let,

Total work=1 portion

LCM of 3 & 4= 12

Per 12 days A work= 12 days

Per 12 days B work=(12/3)=4 days

Per 12 days C work=(12/4)=3 days

In 12 days, (A+B+C)'s work

=(12/20+4/30+3/60)

=47/60 part of the work

Remaining work

=(1-47/60)

=13/60 part of the work

[Every third day B help A in doing the work]

Again, in 3 days (A+B)'s work

=(3/20+1/30)

=11/60 part of the work

Remaining work

=(13/60-11/60)
=2/60=1/30 part of the work

On the16th day, (A+C)'s work =1/20+1/60=1/15 part of the work
1/15 part of work is done by (A+C) in 1 day
1/30 part of work is done by (A+C) in 15*(1/30)=1/2 day
Total Time taken to complete the whole work
=(12+3+1/2)
=15.5 days
Ans: 15.5 days

Question:A alone can do a piece of work in 30 days, while B alone can do it in 15 days and C alone can do it in 10 days.If in every second day B in every third day C help A in doing the work ,how many days will be required to complete the whole work?
[ক একটি কাজ ৩০ দিনে,খ ১৫ দিনে এবং গ ১০ দিনে করতে পারে। প্রতি ২য় দিনে খ এবং প্রতি ৩য় দিনে গ ক কে সাহায্য করলে ঐ কাজ টি কত দিনে শেষ হবে?]
[Agrani Bank SO -2017]
[Bangladesh Krishi Bank SO-2015]
More
**34th BCS WRITTEN
**33th BCS WRITTEN
**21th BCS WRITTEN
**PSC Non cader
Solution:1
Let,
Total work=1 portion

LCM of 2 & 3=6
Per 6 days A work= 6 days
Per 6 days B work=(6/2)=3 days
Per 6 days C work=(6/3)=2 days
So,
6 days (A+B+C)'s work
=(6/30+3/15+2/10) portion
=3/5 portion
Remaining work
=(1-3/5) portion
=2/3 portion
After 2 days(A+B)'s work
=(2/30+1/15)portion
=2/15 portion
[Every second days B help A]
Remaining work
=(2/5-2/15) portion
=4/15 portion
Total time=(6+2)=8 days

9th day(A+C) work
=(1/30+1/10) portion
=2/15 portion
Remaining work

=(4/15-2/15)portion
=2/15 portion
Another 2 days(A+B)'s work
=(2/30+1/15) portion
=2/15 portion
Remaining work
=(2/15-2/15)
=0
So total time taken to finish the work=(9+2)=11 days
Answer:11 days
:
:
Solution:2==========
এখানে,
২ ও ৩ এর ল সা গু =৬
বলে প্রথমে ৬ দিনের কাজ বের করব। ক ,খ ,গ একত্রে প্রথম ৬ দিনে মোট কাজ করে
=(৬ /৩০)+(৩ /১৫)+২ /১০)
=৩ /৫ অংশ
বাকী কাজ =(১ -৩ /৫)
= ২ /৫ অংশ
যেহেতু ২ /৩ <৩ /৫
ক ,খ ,গ একত্রে পরবর্তী ৩দিনে মোট কাজ করে =(৩ /৩০ +১ /১৫+১ /১০) অংশ
=৪ /১৫ অংশ
বাকী কাজ=(২ /৫ -৪ /১৫)

=২/১৫ অংশ।
আবার ২/১৫<৪/১৫ বলে
ক পরবর্তী একদিনে যেহেতু ১/৩০ অংশ কাজ করে
তাই বাকী কাজ =(২/১৫-১/৩০)
=১/১০ অংশ
এখন ক,খ একত্রে করবে ১/১০ অংশ কাজ
সুতরাং ক,খ একত্রে ১ দিনে কাজ করে =(১/৩০+১/১৫)=১/১০ কাজ
বাকি কাজ:(১/১০-১/১০)=0

মোট সময় =৬+৩+১+১=১১ দিন
Answer :11 days

Question :A can complete a project in 20 days & B can complete the same project in 30 days. A & B start working on the project together & A quits 10 days before the project is expected to be completed. How many days in total will the project take to complete?
[JBL AEO(RC)-2017]

Solution :
A 20 দিনে করে 1 অংশ কাজ
A দিনে করে=1/20 অংশ
B 1 দিনে করে=1/30 অংশ
A & B একত্রে 1 দিনে করে=1/12 অংশ
A ও B একত্রে Full কাজ করে 12 দিনে
**10 দিন আগে A চলে যায়

তাহলে দুজন একত্রে(12-10) =2 দিন কাজ করে।
12 দিনে দুজনে করতো 1 অংশ
2 --------={2/12} অংশ
=1/6
Remaining ={1-1/6}
=5/6 অংশ
***বাকী 5/6 অংশ করতে B এর সময় লাগে
B ১ অংশ করে 30 দিনে
এতএব,5/6-------{20*5/6}
=25 দিন
মোট সময় ={25+2}=27 দিন
উওর:27 দিন।