1.	**Ans: [d]** **Solution:** just simply divide 26 by 17 uptil 3 decimal places 26÷17=1.529
2.	**Ans: [b]** **Solution:** We have $\frac{14}{15}$ and $\frac{37}{40}$ Cross multiply both and we get 560 and 555 Clearly 560>555 Hence option b i.e. $\frac{14}{15}$ > $\frac{37}{40}$
3.	**Ans: [d]** **Solution:** C=$\frac{a}{b}$ ----- 1 and a-1=C-----2 substitute value of eq 2 in 1 b(a-1)=a ab-b=a a(b-1)=b so a=$\frac{b}{b-1}$
4.	**Ans: [c]** **Solution:** 40÷0.8+2×18 Apply BDMAS 50+36=86
5	**Ans: [d]** **Solution:** 16^1/4*125^1/3*27^-1/3 =2×5×$\frac{1}{3}$ =$\frac{10}{3}$ =3$\frac{1}{3}$
6.	**Ans: [b]** **Solution:** $\frac{1}{5}$×400=80 3/4 ×80=60 Remaining =20
7.	**Ans: [b]** **Solution:** let the price of machime be x 5 year maintainance charges=100*60=6000 Total investment= x+6000 Totalk rental charges for 60 months=700*60=42000

	ATQ 42000-X-6000=2000 X=34000
8	**Ans: [b]** **Solution:** let they have x,y,z cars respectively After first transaction A=X-Y-Z B=2Y C=2Z AFTER 2Nd transaction A=2(X-Y-Z) B=2Y-(X-Y-Z)-2Z=3Y-X-Z C=4Z After 3rd transaction C=4z-[2(x-y-z)]-(3y-x-z) =7z-x-y A=4x-4y-4z B=6y-2x-2z At the end of all transactions all had 24 tractors each So 7z-x-y=24 x-y-z=6 3y-2x-z=12 On solving A=39 B=21 C=12 **Shortcut** : total tractors at the end is 24+24+24=72 Option b is the only option when 39+21+12 is giving sum as 72
9	**Ans: [a]** **Solution:** $10^{10} \div (10^4 \times 10^2)$ $=10^{10-6}$ $=10^4$
10	**Ans: [d]** **Solution:** divide 4207 by 23 You will get quotient=18 Remainder=21 We know dividend =divisor*quotient+remainder 4207=23*18+21 So add 21 to 4207=4228
11	**Ans: [c]** **Solution:** for the divisibility by 9 the summation of all numbers shall be divisible by 9 1+1+3+2+5+7=19 Let the missing number be x Nearest sum that is divisible by 9 is 27 So 19+x=27

	X=8
12	**Ans: [c]** **Solution:** considering number 948 For the number to be divisible by 3 the summation of digit in number shall by divisible by 3 ie. 9+4+8=21 For the number to be divisible by 4 last two digits of the number shall be divisible by 4 ie 48/4=rem =0
13	**Ans: [b]** **Solution:** For a number to be divisible by 5 it has to end with either a zero or a 5 If it ends with a 5 3+5+7+x+2+5+5=27+x For this number to be divisible by 3 the number 27+x must be divible by 3 so the nearest value of x=6
14	**Ans: [c]** **Solution:** calculating the LCM of 1,2,3…….12 1=1 7=7 2=2 8=2*2*2 3=3 9=3*3 4=2*2 10=2*5 5=5 11=11 6=2*3 12=3*2*2 On prime factorising numbers from 1-12 we observe the max power of 2=3 3=2 5=1 7=1 11=1 So the lcm shall be =8*9*5*7*11 =27720
15	**Ans: [b]** **Solution:** LCM (6,7,15)=210 Greatest multiple of 210 less than 1000=840 Rem multiples=210,420,630
16	**Ans: [a]** **Solution:** let total bullets be x No of bullets with each person after division=x/3 When 4 bullets were each shot by 3 epople remaining bullets=x-12 ATQ X-12=X/3 X=3
17	**Ans: [c]** **Solution:** the gap between 1st and the last strike is of 30 sec Total intervals between 1 and 6th strike=5 I I I I I ….30 sec.. The time gap between 2 strikes=30/5=6

	So 12 strikes will have 11 intervals in between hence time between 1st n last strike=11*6=66
18	**Ans: [d]** **Solution:** 2 ➡ 1 write in this fashion multiply diagonally and add the opposite The num shall be of the form N=120(n)+73 5 ➡ 1 120=3*4*51*3*2 73=4*1+3=7*5+1=36*2+1=73 4 ➡ 3 substitute the value of n from 0,1,2,3.... So hen n=1 N=193 3 1
19	**Ans: [d]** Solution: The first wheel spins at 60 rpm which means that it completes 60/60 = 1 revolution every second. The second wheel spins at 36 rpm. So it completes 36/60 = 0.6 of a revolution every second The third wheel spins at 24 rpm. So it completes 24/60 = 0.4 of a revolution every second. So we have the values: 1, 0.6, 0.4 If we wait 10 seconds, then we multiply each value by 10 to get: 10, 6, 4 Now we can divide by the GCF 2 to get 5, 3, 2 This means that it will take 5 seconds for the spots to line up again (since the first number corresponds to the amount of time that has gone by in seconds)
20	**Ans: [b]** **Solution:** 6 ➕ 3 the number shall be of the form 7 ➕ 5 N=336K+201 8 4 Now divide 201 by 8,7,6 resp When 201/6 remainder =3
21	**Ans: [b]** **Solution**: the factors of 24 is 3 and 8. all the given number is divided by 3 and 8. so,answer is 24.

22	**Ans: [c]**
	Solution: F(t)=2D(p)=4F(p)
	  D(t)=1
	  F(t)=13
	  Fr(t)=7
	   D(p)=14
	   F(p)=2

	D(t)+D(p)=15
23	**Ans: [d]** **Solution**: Take LCM (9,10,15) = 90 Step 2 - Divide 1936 by 90. 1936÷90 = 21 (quotient) and 46(remainder) Step 3 - To get 7 as remainder you must subtract 39. As 46–39 = 7
24	**Ans: [b]** **Solution**: Required number = H.C.F. of (1657 - 6) and (2037 - 5) = H.C.F. of 1651 and 2032 = 127.
25	**Ans: [a]** **Solution**: Let the numbers be a and b. Then, a + b = 55 and ab = 5 x 120 = 600. The required sum $= \frac{1}{a} + \frac{1}{b} = \frac{a+b}{ab} = \frac{55}{600} = \frac{11}{120}$
26	**Ans: [c]** **Solution:** Let 2272 ÷ N = a, remainder = r => 2272 = Na + r ----------------------------(Equation 1) Let 875 ÷ N = b, remainder = r => 875 = Nb + r ---------------------------(Equation 1) (Equation 1) - (Equation 2) => 2272 - 875 = [Na + r] - [Nb + r] = NA - Nb = N(a - b) => 1397 = N(a - b) ---------------------------(Equation 3) It means 1397 is divisible by N But 1397 = 11 × 127 You can see that 127 is the only 3 digit number which perfectly divides 1397 => N = 127 sum of the digits of N = 1 + 2 + 7 = 10
27	**Ans: [c]** **Solution:** The prime factorization in exponential form is: 24 x 33 x 52 Step 2 Setup the equation for determining the number of factors or divisors. The equation is: d(n) = (a + 1)(b + 1)(c + 1) Where d(n) is equal to the number of divisors of the number and a, b, etc. are equal to the exponents of the prime factorization. Now substitute the letters in the equation with the the exponents of your prime factorization and then solve to calculate the total number of divisors. 10,800 = 24 x 33 x 52 d(n) = (a + 1)(b + 1)(c + 1)

	$$d(10800) = (4 + 1)(3 + 1)(2 + 1)$$ $$d(10800) = (5)(4)(3)$$ $$d(10800) = 60$$

28	**Ans: [c]**
	 Solution: 270=2*3^3*5
	         (2^0+2^1)(3^0+3^1+3^2+3^3)(5^0+5^1)
	         (3)(40)(6)
	          720

29	**Ans: [d]**
	 Solution: 180=2^2*3^2*5
	         Number of factors(2+1)(2+1)(1+1)
	          3*3*3 =18
	        Product of two facors= Number of factors/2
	         18/2
	         =9

30	**Ans: [b]** **Solution:** Number of zeros are representation of number of pairs of (2x5) because 2x5=10 which makes one zero But 133! on factorizing will have higher power of 2 than the power of 5 because higher the prime number, lower the power available in any factorial Power of 5 in 133! = [133/5] + [133/5^2] + [133/5^3] Power of 2 in 133! = [133/2] + [133/2^2] + [133/2^3] + [133/2^4] + [133/2^5] + [133/2^6] = Where [133/5] refers the Greatest Integer Function i.e. [133/5]= 25 and [133/5^2] = = 5 and [133/5^3] = 1 Power of 5 in 133!=31
31	**Ans: []** **Solution:**
32	**Ans: [a]** **Solution**: 12 is not a prime number. 12 = 2^2*3 Now we find the maximum power of 2 in 100! and maximum power of 3 in 100! and find how many 12's can be formed. Because maximum power of 3 is 48 which is less than 2 , so answer is 48
33	**Ans: [d]** **Solution:** 1+4+9+6+5+6+3+6+9 =49= 9 at unit place
34	**Ans: 7** **Solution:** 20/4, as remainder is 0

	So answer is 7
35	**Ans: [a]** **Solution:** 32^32 is having the unit digit as 7 　　　　Frther doing the 32 raise to the power of unit digit 6 　　　　Remainder is 7
36	**Ans: [b]** Solution: finding the unit place digit in each case 　　　　1+4+6+6+0+0+0+0+0 = 17 　　　　Hence it is 7
37	**Ans: [c]** **Solution:** Answer is 873 　　　　Product of first 7 natural no. is 7! 　　　　So after 7! Remainder is zero , before that we have to find in from (1!+2!+3!+4!+5!+6!)/7!
38	**Ans: [a]** 　**Solution**: What is the remainder when 444444 ^ 444 is divided by 7 ? 　Remainder[444/7] = 3 　Remainder[444 444 ^ 444 / 7] = Remainder [3 444 ^ 444 / 7] 　= Remainder [(32) 222 ^ 444 / 7] = Remainder [2222 ^ 444 / 7] (As Remainder [32 / 7] = 2) 　= Remainder [(23) 74 ^ 444 / 7] = Remainder [1 74 ^ 444 / 7] = 1 (As Remainder [23 / 7] = 1)
39	**Ans: []** **Solution:**
40	**Ans: []** **Solution:** we know that $a_n = ar^{n-1}$
41	**Ans:**
42	**Ans:[c]** **Solution:**　　5(a + 4d) = 6(a+5d). solving this we get, a + 10 d = 0, this is the 11th term of an A.P
43	**Ans: []** **Solution:**
44	**Ans: []** **Solution:**
45	**Ans: [a]**

	Solution: sum of an infinite GP is a/1-r and series is a,ar,ar2,ar3.....infinite. Sum of square of this series is -- - a2/1-r2 since a/1-r=9/4 and a2/1-r2=81 a=9/4(1-r) put into second eqn n get r=2/3 n a=3/4 and second term =ar= ½
46	**Ans: []** **Solution:**
47	**Ans: [b]** **Solution:** The first drop is 240 metres. After this the ball will rise by 150 metres and fall by 150 metres. This process will continue in the form of infinite GP with common ratio 0.625 and first term 150. The required answer is given by the formula: a/(1-r) Now, [{240/(3/8)}+{150/(3/8)}] = 1040 m.
48	**Ans: [a]** **Solution:** Sum=a(1 - rn)/1 - r Sum=6561,a=2,r=3 Using the above formula and putting the given values we got the Number of terms,n=8
49	**Ans: [c]** **Solution:** we know sum of 1st N natural numbers = n(n+1)/2. By hit and trial , the nearest sum more than 280 will be 300 for numbers upto 24. Since we are getting total of 280, the number missing is 20
50	**Ans: [a]** **Solution:** 1≤ n ≤ 126 Each student should get equal number of pencils which means N should be the value between 1 and 126 that completely divides 126. Putting the value of N ,we got 1,2,3,6,7,9,14,18,21,42,63,126 are the numbers which divide 126 completely. So, N=12