MATHS

BOOKS - SURA MATHS (TAMIL ENGLISH)

NUMBER AND SEQUENCES

Execrise 2 1

1. Find all positive integers which when divided by 3 leaves remainder 2.

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2. A man has 532 flower pots. He wants to arrange them the rows such that each row contains 21 flowers pots. Find the number of completed rows and how many flower pots are left over.

3. Prove that the product of two consecutive positive integers is divisible by 2.

4. When the positive integers be a, b and c divided by 13, the respective remainders are 9, 7 and 10. Show that $a + b + c$ is divided by 13.

5. Prove that the square of any integer leaves the remainder either 0 or 1 when divided by 4.

6. Use Euclid Division Algorithm to find the Highest Common Factor (H.C.F) of

340 and 412

7. Use Euclid Division Algorithm to find the Highest Common Factor (H.C.F) of

867 and 255

8. Use Euclid Division Algorithm to find the Highest Common

Factor (H.C.F) of

10224 and 9648

9. Use Euclid Division Algorithm to find the Highest Common

Factor (H.C.F) of

84, 90 and 120

10. Find th largest number which divides 1230 and 1926 leaving remainder 12 in each case.

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11. If d is the Highest Common Factor of 32 and 60, find x and y satisfying $d = 32x + 60y$.

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12. A positive integer when divided by 88 gives the remainder 61. What will be the remainder when the same number is divided by 11?

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13. Prove that two consecutive positive integers are always coprime.

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Execrise 2 2

1. For what values of natural number n, 4^n can end with the digit 6?

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2. If m, n are natural numbers, for what values of m, does $2^n \times 5^m$ ends in 5?

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3. Find the H.C.F of 252525 and 363636.

4. If $13824 = 2^a \times 3^b$ then find a and b.

5. If $p_1^{x_1} \times p_2^{x_2} \times p_3^{x_3} \times p_4^{x_4} = 11340$ where p_1, p_2, p_3, p_4 are primes in ascending order and x_1, x_2, x_3, x_4 are integers, find the value of p_1, p_2, p_3, p_4 and x_1, x_2, x_3, x_4.

6. Find the L.C.M. and H.C.F. of 408 and 170 by applying the fundamental theoram of arithmetic.

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7. Find the greatest number consisting of 6 digits which is exactly divisible by 24, 15, 36?

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8. What is the smallest number that when divided by three numbers such as 35, 56 and 51 leaves remainder 7 in each case?

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9. Find the least number that is divisible by the first ten natural numbers.

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Execrise 2 3

1. Find the least positive value of x such that

$71 = x \pmod 8$`

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2. Find the least positive value of x such that

$78 + x = 3 \pmod 5$

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3. Find the least positive value of x such that

$89 = (x + 3)\pmod 4$

4. Find the least positive value of x such that

$96 = \dfrac{x}{7}\pmod 5$

5. Find the least positive value of x such that

$5x = 4 \pmod 6$

6. If x s congruent to 13 modulo 17 then $7x - 3$ is congruent to which number modulo 17?

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7. Solve $5x = 4$ (mod 6)

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8. Solve $3x - 2 = 0$ (mod 11)

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9. What is the time 100 hours after 7 a.m.?

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10. What is the time 15 hours before 11 p.m.?

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11. Today is Tuesday. My uncle will come after 45 days. In which day my uncle will be coming?

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12. Prove the $2^n + 6 \times 9^n$ is always divisible by 7 for any positive integer n.

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13. Find the remainder when 2^{81} is divided by 17.

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14. The duration of flight travel from Chennai to London through British Airlines is approximately 11 hours. The airplanes begin its journey on Sunday at 23:30 hours. If the time at Chennai is four and half hours ahead to that of London's time, then find the time at London,when will the flight lands at London Airport.

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Execrise 2 4

1. Find the next terms of the following sequence.

8, 24, 72, ...

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2. Find the next terms of the following sequence.

5, 1, -3, ...

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3. Find the next terms of the following sequence.

$$\frac{1}{4}, \frac{2}{9}, \frac{3}{16}, \ldots$$

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4. Find the first four terms of the sequences whose nth terms are given by

$$a_n = n^3 - 2$$

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5. Find the first four terms of the sequences whose nth terms are given by

$$a_n = (-1)^{n-1} n(n+1)$$

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6. Find the first four terms of the sequences whose nth terms are given by

$$a_n = 2n^2 - 6$$

7. Find the nth terms of the following sequences

2, 5, 10, 17, ...

8. Find the nth terms of the following sequences

$$0, \frac{1}{2}, \frac{2}{3}, \ldots$$

9. Find the nth terms of the following sequences

$$3, 8, 13, 18, \ldots$$

10. Find the indicated terms of the sequences whose nth terms are given by

$$a_n = \frac{5n}{n+2}, \ a_6 \ \text{and} \ a_{13}$$

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11. Find the indicated terms of the sequences whose nth terms are given by

$$a_n = -\left(n^2 - 4\right), \ a_4 \ \text{and} \ a_{11}$$

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12. Find the a_8 and a_{15} whose nth term is

$$a_n = \begin{cases} \frac{n^2-1}{n+3}, & \text{n is even}, n \in N \\ \frac{n^2}{2n+1}, & \text{n is odd}, n \in N \end{cases}$$

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13. If $a_1 = 1$, $a_2 = 1$ and $a_n = 2a_{n-1} + a_{n-2}$, $n \geq 3$, $n \in N$, then find the first six terms of the sequence.

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Execrise 2 5

1. Check whether the following sequences are in A.P.

$a - 3, a - 5, a - 7, \ldots$

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2. Check whether the following sequences are in A.P.

$\dfrac{1}{2}, \dfrac{1}{3}, \dfrac{1}{4}, \dfrac{1}{5}, \ldots$

3. Check whether the following sequences are in A.P.

$9, 13, 17, 21, 25, \ldots$

4. Check whether the following sequences are in A.P.

$\dfrac{-1}{3}, 0, \dfrac{1}{3}, \dfrac{2}{3}, \ldots$

5. Check whether the following sequences are in A.P.

$1, -1, 1, -1, -1, \ldots$

6. First term a and common difference d are given below. Find the corresponding A.P.,

$a = 5, d = 6$

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7. First term a and common difference d are given below. Find the corresponding A.P.,

$a = 7, d = -5$

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8. First term a and common difference d are given below. Find the corresponding A.P.,

$$a = \frac{3}{4}, d = \frac{1}{2}$$

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9. Find the first term and common difference of the Arithmetic

Progressions whose nth terms are given below

$$t_n = -3 + 2n$$

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10. Find the first term and common difference of the Arithmetic

Progressions whose nth terms are given below

$$t_n = 4 - 7n$$

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11. Find the 9th term of A.P. $-11, -15, -19, \ldots$

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12. Which term of an A.P. $16, 11, 6, 1, \ldots$ is -54?

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13. Find the middle term(s) of an A.P. $9, 15, 21, 27, \ldots, 183$

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14. If nine times ninth term is equal to the fifeen times fifteenth term, show that six times twenty fourth is zero.

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15. If $3 + k, 18 - k, 5k + 1$ are in A.P. then find k,

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16. Find the x, y, and z, given that the number x, 10, y, 24, z are in A.P.

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17. In a threatre, there are 20 seats in the front row and 30 rows were alloted. Each successive row contains two additional seats than its front row. How many seats are there in the last row?

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18. The sum of the three consecutive terms that are in A.P. is 27 and their product is 288. Find the three terms.

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19. The ratio of 6th and 8th term of an A.P. is 7.9. Find the ratio of 9th to 13th term.

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20. In a winter season let us take the temperature of Ooty from Monday to Friday to be in A.P. The sum of temperature from Monday to Wednesday is $0°C$ and the sum of the temperature from Wednesday to Friday is $18°C$. Find the temperature on each of the five days.

▶

21. Priya earned ₹15,000 in the first month. Therefore her salary inceased by ₹1500 per year. Her expenses are ₹13,000 during the first year and the expenses inceases by ₹900 per year. How long will it take for her to save ₹20,000 per month.

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Execrise 2 6

1. Find the sum of the following

3, 7, 11, . . . upto to 40 terms.

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2. Find the sum of the following

102, 97, 92, . . . upto to 27 terms.

3. Find the sum of the following

$6 + 13 + 20 + \ldots + 97$

4. How many consecutive odd integers beginning with 5 will sum to 480?

5. Find the sum of the first 28 terms of an A.P. whose nth term is 4n-3.

6. The sum of first n terms of a certain series is given as $2n^2 - 3n.$ Show that the series is an A.P.

7. The 104th term and 4th term of an A.P. are 125 and 0. Find the sum of first 35 terms.

8. Find the sum of all odd integers less than 450.

9. Find the sum of all natural numbers between 602 and 902 which are not divisible by 4.

10. Raghu wish to buy a laptop. He can buy it by paying ₹40,000 cash or by giving it in 10 installments as ₹4800 in the first month, ₹4750 in the second month, ₹4700 in the third month and so on. If he pays the money inn this fashion, find total amount paid in 10 installments.

11. Raghu wish to buy a laptop. He can buy it by paying ₹40,000 cash or by giving it in 10 installments as ₹4800 in the first month, ₹4750 in the second month, ₹4700 in the third month and so on. If he pays the money inn this fashion, find how much extra amount that he has to pay than the cost?

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12. A man repays a loan of ₹65,000 by paying ₹400 in the first month and then inceasing the payment by ₹300 every month. How long will it take for him to clear the loan?

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13. A brick staircase has a total of 30 steps. The bottom step requires 100 bricks. Each successive step requires two bricks less than the previous step.

How many bricks are required for the top most step?

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14. A brick staircase has a total of 30 steps. The bottom step requires 100 bricks. Each successive step requires two bricks less than the previous step.

How many bricks are required to build the stair case?

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15. If $S_1, S_2, S_3, \ldots, S_m$ are the sums of n terms of m A.P.'s whose first terms are 1, 2, 4, ..., m and whose common differences are 1, 3, 5, ..., (2m-1) repectively, then show that

$$S_1 + S_2 + S_3 + \ldots + S_n = \frac{1}{2}mn(mn + 1)$$

16. Find the sum

$$\left[\frac{a - b}{a + b} + \frac{3a - 2b}{a + b} + \frac{5a - 3b}{a + b} + \ldots + \text{to } 12 \text{ terms}\right]$$

Execrise 2 7

1. Which of following sequences are in G.P.

$3, 9, 27, 81, \ldots,$

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2. Which of following sequences are in G.P.

$4, 44, 444, 4444, \ldots$

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3. Which of following sequences are in G.P.

$0.5, 0.05, 0.005, \ldots$

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4. Which of following sequences are in G.P.

$$\frac{1}{3}, \frac{1}{6}, \frac{1}{12}, \ldots,$$

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5. Which of following sequences are in G.P.

$$1, \; -5, 25, \; -125, \ldots$$

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6. Which of following sequences are in G.P.

$$120, 60, 30, 18, \ldots$$

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7. Which of following sequences are in G.P.

$16, 4, 1, \dfrac{1}{4}, \ldots$

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8. Write the first three terms of the G.P. whose first term and the common ratio are given below.

$a = 6, r = 3$

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9. Write the first three terms of the G.P. whose first term and the common ratio are given below.

$a = \sqrt{2}, r = \sqrt{2}$

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10. Write the first three terms of the G.P. whose first term and the common ratio are given below.

$a = 1000, r = \dfrac{2}{5}$

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11. In a G.P. 729, 243, 81, ... find t_7

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12. Find x so that $x + 6, x + 12$ and $x + 15$ are consecutive terms of Geometric Progressions.

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13. Find the number of terms in the following G.P.

4, 8, 16, . . ., 8192

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14. Find the number of terms in the following G.P.

$\dfrac{1}{3}, \dfrac{1}{9}, \dfrac{1}{27}, \dots, \dfrac{1}{2187}$

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15. In a G.P. the 9th term is 32805 and 6th term is 1215. Find the 12th term.

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16. Find the 10th term of G.P. whose 8th term is 768 and the common ratio is 2.

17. If a, b, c are in A.P. then show that 3^a, 3^b, 3^c are in G.P.

18. In a G.P. the product of three consecutive term is 27 and the sum of the product of two terms taken at a time is $\dfrac{57}{2}$. Find the three terms.

19. A man joined a company as Assistant Manager. The company gave him a starting salary of ₹60,000 and agreed to incease his salary 5% annually. What will be his salary after 5 years.

20. Sivamani is attending an interview for a job and the company gave two offers to him Offer A: ₹20,000 to start with followed by a guaranted annual increase of 3% for the first 5 years.

Offer B: ₹22,000 to start with followed by a guaranteed annual increase of 3% for the first 5 years.

what is this salary in the 4th year with respect to the Offer A and B?

21. If a, b, c are three consecutive terms of an A.P. and x, y, z are three consecutive terms of a G.P. then prove that

$$x^{b-c} \times y^{c-a} \times z^{a-b} = 1$$

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Execrise 2 8

1. Find the sum of first n terms of the G.P.

$$5, \ -3, \ \frac{9}{5}, \ -\frac{27}{25}, \ldots$$

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2. Find the sum of first n terms of the G.P.

$$256, 64, 16, \ldots$$

3. Find the sum of first six terms of the G.P. 5, 15, 45, ...

4. Find the first term of the G.P. whose common ratio 5 and whose sum to the 6 terms is 46872.

5. Find the sum of infinity of

$9 + 3 + 1 + \ldots$

6. Find the sum of infinity of

$$12 + 14 + \frac{28}{3} + \ldots$$

7. If the first term of an infinite G.P. is 8 and its sum to infinity is

$\frac{32}{3}$ then find the common ratio.

8. Find the sum to n terms of the series

$0.4 + 0.44 + 0.444 + \ldots$ to n terms.

9. Find the sum to n terms of the series

$3 + 33 + 333 + \ldots$ to n terms.

10. Find the sum of the Geometric series $3 + 6 + 12 + \ldots 1536$.

11. Kumar writes a letter to four of his friends. He asks each one of them to copy the letter and mail to four different persons with the instruction that they continue the process similarly. Assuming that the process is unaltered and it costs ₹2 to mail one letter, find the amount spent on postage when 8th set of letters is mailed.

12. Find the rational form of the number $\overline{0.123}$.

13. If

$$S_n = (x + y) + (x^2 + xy + y^2) + (x^3 + x^2y + y^2x + y^3) + \ldots n$$

terms   then   prove   that

$$(x - y)S_n = \left[\frac{x^2(x^n - 1)}{x - 1} - \frac{y^2y^n - 1}{y - 1} \right].$$

Execrise 2 9

1. Find the sum of the following series

$$1 + 2 + 3 + \ldots 60$$

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2. Find the sum of the following series

$$3 + 6 + 9 + \ldots + 96$$

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3. Find the sum of the following series

$$51 + 52 + 53 + \ldots + 92$$

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4. Find the sum of the following series

$1 + 4 + 9 + 16 + \ldots + 225$

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5. Find the sum of the following series

$6^2 + 7^2 + 8^2 + \ldots + 21^2$

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6. Find the sum of the following series

$10^3 + 11^3 + 12^3 + \ldots + 20^3$

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7. Find the sum of the following series

$$1 + 3 + 5 + \ldots + 71$$

8. If $1 + 2 + 3 + \ldots + k = 325,$ then find $1^3 + 2^3 + 3^3 + \ldots + k^3.$

9. If $1^3 + 2^3 + 3^3 + \ldots + k^3 = 44100$ then find $1 + 2 + 3 + \ldots + k.$

10. How many terms of the series $1^3 + 2^3 + 3^3 + \ldots$ should be taken to get the sum 14400?

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11. The sum of the squares of the first n natural numbers is 285, while the sum of their cubes is 2025. Find the values of n.

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12. Rakha has 15 square colour papers of sizes 10cm, 11cm, 12cm... 24 cm. How much area can be decorated with these colour papers?

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13. Find the sum of the series

$$\left(2^3 - 1\right) + \left(4^3 - 3^3\right) + \left(6^3 - 15^3\right) + \dots \text{ to n terms}$$

14. Find the sum of the series

$$\left(2^3 - 1\right) + \left(4^3 - 3^3\right) + \left(6^3 - 15^3\right) + \dots \text{ to 8 terms}$$

Exercrise 2 10

1. Euclid's division lemma states that for positive integers a and b, there exist unique integers q and r such that $a = bq + r$, where r must satisfy.

A. $1 < r < b$

B. $0 < r < b$

C. $0 \leq r < b$

D. $0 < r \leq b$

Answer: C

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2. Using Euclid's division lemma, if the cube of any positive integers is divided by 9 then the possible remainders are ___.

A. 0, 1, 8

B. 1, 4, 8

C. 0, 1, 3

D. 1, 3, 5

Answer: A

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3. If the H.C.F. of 65 and 117 is expressible in the form of $65m - 117$, then the value of m is

A. 4

B. 2

C. 1

D. 3

Answer: B

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4. The sum of the exponents of the prime factors in the prime

factorization of 1729 is

A. 1

B. 2

C. 3

D. 4

Answer: C

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5. The least number that is divisible by all the numbers from 1 to

10 (both inclusive) is

A. 2025`

B. 5220

C. 5025

D. 2520

Answer: C

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6. $7^{4k} = \_\_ \pmod{100}$

A. 1

B. 2

C. 3

D. 4

Answer: D

7. Given $F_1 = 1$, $F_2 = 3$ and $F_n = F_{n-1} + F_{n-2}$ then F_5 is

A. 3

B. 5

C. 8

D. 11

Answer: D

8. The first term of an arithmetic progressions is unity and the common difference is 4. Which of the following will be a term of this A.P.

    A. 4551

    B. 10091

    C. 7881

    D. 13531

Answer: C

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9. If 6 times of 6th term of an A.P. is equal to 7 times term, then the 13th term of the A.P. is

A. 0

B. 6

C. 7

D. 13

Answer: A

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10. An A.P. consists of 31 terms. If its 16th terms is m, then the sum of all the terms of this A.P. is

A. 16 m

B. 62 m

C. 31 m

D. $\dfrac{31}{2}$ m

Answer: C

11. In an A.P., the first terms is 1 and the the common difference is 4. How many terms of the A.P. must be taken for their sum to be equal to 120?

A. 6

B. 7

C. 8

D. 9

Answer: C

12. If $A = 2^{65}$ and $B = 2^{64} + 2^{63} + 2^{62} + \ldots + 2^{0}$ which of the following is true?

A. B is 2^{64} more than A

B. A and B are equal

C. B is larger than A by 1

D. A is larger than B by 1

Answer: D

13. The next term of the sequences $\dfrac{3}{16}, \dfrac{1}{8}, \dfrac{1}{12}, \dfrac{1}{18}, \ldots$

14. If the sequence $t_1, t_2, t_3, \ldots$ are in A.P. then the sequence $t_6, t_{12}, t_{18}, \ldots$ is

A. a G.P.

B. an A.P

C. Neither A.P. nor G.P.

D. a constant sequence

Answer: B

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15. The value of

$$\left(1^3 + 2^3 + 3^3 + \ldots + 15^3\right) - (1 + 2 + 3 + \ldots + 15) \text{ is}$$

A. 14400

B. 14200

C. 14280

D. 14520

Answer: C

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Unit Test 2

1. Prove that $n^2 - n$ divisible by 2 for every positive integer n.

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2. A milk man has 175 litres of cow's milk and 105 litres of buffalow's milk. He wishes to sell the milk by filling the two type of milk is cans of equal capacity. Calculate the following

Capacity of a can.

3. A milk man has 175 litres of cow's milk and 105 litres of buffalow's milk. He wishes to sell the milk by filling the two type of milk is cans of equal capacity. Calculate the following

Number of cans of cow's milk.

4. A milk man has 175 litres of cow's milk and 105 litres of buffalow's milk. He wishes to sell the milk by filling the two type of milk is cans of equal capacity. Calculate the following Number of cans of buffalow's milk.

5. When the positive integer a, b, c and are divided by 13 the respective remainders are 9, 7 and 10. Find the remainder when $a + 2b + 3c$ is divided by 13.

6. Show that 107 is of the form 4q+3 for any integer q.

7. If (m+1)th term of an A.P. is twice the (n+1)th term, then prove that (3m+1)th term is twice the (m+n+1)th term

8. Find the 12th term from the last term of the $A.P. -2, -4, -6, \ldots, -100.$

9. Two A.P.'s have the same common difference. The first term of one A.P. is 2 and that of the other is 7. Show that the difference between their 10th terms is the same as the difference between their 21th terms, which is the same as the difference between any two corresponding terms.

10. A man saved ₹16500 in ten years. In each year after the first he saved ₹100 more than he did in the preceeding year. How much did he save in the first year?

11. Find the G.P. in which the 2nd term is $\sqrt{6}$ and the 6th term is $9\sqrt{6}$?

12. The value of a motor cycle depreciates at the rate of 15% per year. What will be the value of the motor cycle 3 year hence,

which is now purchased for ₹45,000?

Government Exam Questions

1. A sequence is a function defined on the set of___.

A. Real numbers

B. Natural numbers

C. Whole numbers

D. Integers

Answer: (2)

2. Compute x scuh that $10^4 = x \pmod{19}$.

3. An organization plans to plant saplings is 25 streets in a town in such a way that one sapling for the first street, three for the seconds, nine for the third and so on. How many sapling are needed to complete the work?

4. Find the greatest number that will divide 445 and 572 leaving remainders 4 and 5 respectively.

5. If a clock strickes once at 1 o'clock, twice at 2o'clock, thrice at 3 o'clock and so on. How many times will it strikes in day?

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6. a and b are two positive integers such that $a^b \times b^a = 800$. Find the a and b.

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7. Show that the sequence described by $a_n = \frac{1}{3}n + \frac{1}{6}$ is an A.P.

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8. Find the sum of $1 + 3 + 5 + \ldots + 55$

9. The sum of first n, 2n and 3n terms of an A.P. are S_1, S_2, S_3 respectively. Prove that $S_3 = 3(S_2 - S_1)$.

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10. If the sum of $n, 2n, 3n$ terms of an AP are S_1, S_2, S_3 respectively . Prove that $S_3 = 3(S_2 - S_1)$

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11. If the 4th and 7th term of Geometrics Progressions are 54 and 1458 respectively, find the Geometric Progression.

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12. In a Geometric Progression, the 4th term is 8, and the 8th term is $\dfrac{128}{625}$. Find the Geometric Progression.

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1. Find the LCM and HCF of 6 and 20 by the prime factorisation method.

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2. Determine the AP whose 3rd term is 5 and the 7th term is 9.

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3. If the sum of the first 14 terms of an AP is 1050 and its first term is 10, find the 20th term.

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4. How many terms of the A.P.: 24, 21, 28, ...` must be taken so that their sum is 78?

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5. Use Euclid's algorithm to find the HCF of 4053 and 12756.

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6. Show that any positive odd integer is of the form 4q+1 or 4q+3, where q is some integer.

7. Prove that $\sqrt{3}$ is an irrational number.

8. Which of the following lies of numbers form an AP? If they form an AP, write the next two terms:

4, 10, 16, 22,...

9. Which of the following lies of numbers form an AP? If they form an AP, write the next two terms:

1, -1, -3, -5, ...

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10. Which of the following lies of numbers form an AP? If they form an AP, write the next two terms:

-2, 2, -2, 2, -2, ...

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11. Which of the following lies of numbers form an AP? If they form an AP, write the next two terms:

1, 1, 1, 2, 2, 2, 3, 3, 3, ...

12. In a flower bed, there are 23 rose plants in the first row, 21 in the second, 19 in the third, and so on. There are 5 rose plants in the last row. How many rows are there in the flower bed?

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13. Find the sum of first 24 terms of the list of numbers whose nth term is given by $a_n = 3 + 2n$.

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Unit Test

1. Using Euclid's division lemma, if the cube of any positive integers is divided by 9 then the possible remainders are ___.

    A. 0, 1, 8

    B. 1, 4, 8

    C. 0, 1, 3

    D. 1, 3, 5

Answer: (1)

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2. The sum of the exponents of the prime factors in the prime factorization of 1729 is

    A. 1

B. 2

C. 3

D. 4

Answer: (3)

3. The first term of an arithmetic progressions is unity and the common difference is 4. Which of the following will be a term of this A.P.

A. 4551

B. 10091

C. 7881

D. 13531

Answer: (3)

4. An A.P. consists of 31 terms. If its 16th terms is m, then the sum of all the terms of this A.P. is

    A. 16 m

    B. 62 m

    C. 31 m

    D. $\dfrac{31}{2}$ m

Answer: (3)

5. The value of

$(1^3 + 2^3 + 3^3 + \ldots + 15^3) - (1 + 2 + 3 + \ldots + 15)$ is

A. 14400

B. 14200

C. 14280

D. 14520

Answer: (3)

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6. Find all positive integers which when divided by 3 leaves remainder 2.

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7. For what values of natural number n, 4^n can end with the digit 6?

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8. What is the time 100 hours after 7 a.m.?

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9. Find the 9th term of A.P. $-11,\ -15,\ -19, \ldots$

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10. The sum of the squares of the first n natural numbers is 285, while the sum of their cubes is 2025. Find the values of n.

11. Sivamani is attending an interview for a job and the company gave two offers to him Offer A: ₹20,000 to start with followed by a guaranted annual increase of 6% for the first 5 years.

Offer B: ₹22,000 to start with followed by a guaranteed annual increase of 3% for the first 5 years.

what is this salary in the 4th year with respect to the Offer A and B?

12. Kumar writes a letter to four of his friends. He asks each one of them to copy the letter and mail to four different persons with the instruction that they continue the process similarly. Assuming that the process is unaltered and it costs ₹2 to mail

one letter, find the amount spent on postage when 8th set of letters is mailed.

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