Explore | Expand | Enrich

REMAINDER METHOD

Content:

Dividend = Quotient x Divisor + Remainder

Example: 57 = 8 x 7 + 1

57 – Dividend

8 – Quotient

7 – Divisor

1 - Remainder

Content:

Rule Of Multiplication

R{a*b/c}=R{a/c}*R{b/c}

Ex:R{17*35/4} = R{17/4}*R{35*4}=1*3=3

Rule of Addition

R{a+b/c}=R{a/c}+R{b/c}

R{5^32+3^21/4}=R{5/4}*R5/4}*R{5/4}...upto 32 terms

R{5^32/4}=1^32=1

Question: 01

What is the remainder when 112 * 115 * 117 / 11?

A. 1

B. 2

C. 4

D. 10

Answer:C

Explanation:

2 * 5 * 7 = 70 / 11 = 4

Question: 02

Find the remainder when 73 + 75 + 78 + 57 + 197 is divided by 34.

A. 32

B. 4

C. 15

D. 28

Answer: B

Explanation:

R{ (73*75*78*57*197)/34}

= R{ (5*7*10*23*27)/34}

= R{ (7*5)*(10*9) /34 }

= R{1*90/34}

= 22

Question: 03

Find the remainder when 73 × 75 × 78 × 57 × 197 × 37 is divided by 34.

A. 32

B. 30

C. 15

D. 28

Answer:A

Explanation:

$\frac{73\times75\times78\times57\times197\times37}{34}$

We have taken individual remainder, which means if 73 is divided by 34 individually, it will give remainder 5, 75 divided 34 gives remainder 7 and so on.

5×7×10×23×27×3 / 34

35×30×23×27 / 34

1×−4×−11×−7 / 34

[We have taken here negative as well as positive remainder at the same time. When 30 divided by 34 it will give either positive remainder 30 or negative remainder -4. We can use any one of negative or positive remainder at any time.

28×−11 / 34

−6×−11 / 34

66 / 4 = 32

Question: 04

On dividing a number by 56, we get 29 as remainder. On dividing the same number by 8, what will be the remainder ?

A. 4

B. 5

C. 6

D. 7

Answer: B

Explanation:

Applying remainder theorem i.e.

A=bq+r

b = divisor

r = remainder

A = 56q + 29

if q = 1

The no. Is A = 85

on dividing by 8

Remainder r =5

Question: 05

Find the remainder when 43^{197} is divided by 7.

A. 2

B. 4

C. 6

D. 1

Answer: D

Explanation:

43 mod 7 = 1

The modulus operator returns the remainder of the division of one number by the another.

so 43^197 mod 7 = 1^197 mod 7 = 1

hence remainder 1

Question: 06

Find the remainder when (21)875 is divided by 7.

A. 8

B. 13

C. 16

D. 0

Answer: D

Explanation:

21= 7 x 3.

So when 21- is divided by 7 will give a remainder of ZERO (0).

So any multiple of 21^ n (n= a y positive integer from 1 to infinity) will give a remainder of ZERO. (0).

Question: 07

What will be remainder when 17^200 is divided by 18 ?

A. 17

B. 16

C. 1

D. 12

Answer: C

Explanation: 07

if n = even ==>(x^n - a^n) is completely divisible by (x + a)
(17^200 - 1^200) is completely divisible by (17 + 1), i.e., 18.
==> (17^200 - 1) is completely divisible by 18.
==>On dividing 17^200 by 18, we get 1 as remainder.
R = 1

Question: 08

Find the remainder when $x^2 + 6x - 17$ is divided by $x - 1$

A. -15

B. -10

C. 10

D. 15.

Answer: B

Explanation: 08

$x^2 + 6x - 17$ is divided by $x - 1$.

x-1=0;x=1

f(x)=$x^2 + 6x - 17$

= -10

Question: 09

Find the remainder of 1!+2!+3!+....+1000! / 10

A. 3

B. 4

C. 9

D. 6

Answer:A

Explanation:

1!=1
2!=2
3!=6
4!=24
5!=120
.
1000!=...0

1+2+6+4=13 / 10
=3

Question: 10

N=1!+2!+3!+....+2010! What is the digit in the unit's place of N?

A. 2

B. 3

C. 4

D. 6

Answer: B

Explanation:

1!=1

2!=2

3!=6

4!=24

5!=120

.

2010!=...0

1+2+6+4=13

Question: 11

On dividing a number by 5, we get 3 as remainder. What will the remainder when the square of this number is divided by 5?

A. 0

B. 1

C. 2

D. 4

Answer: D

Explanation: 11

Any number when divided by 5 leaves remainder 3 will be of type: 5k + 3

Square of Number = (5k + 3)2 = 25k2 + 30k + 9

When this square is divided by 5, remainder will be same as the remainder when 9 is divided by 5.

Hence, 4 is the remainder.

Question: 12

On dividing a number by 357, we get 39 as remainder. On dividing the same number by 17, what will be the remainder?

A. 0

B. 3

C. 5

D. 11

Answer: C

Explanation:

357/17 = 21

39/17 = 2. R5

The number will divide by 17 to give 21 + 2 = 23 with the remainder 5

Question: 13

A number when divided by 296 leaves 75 as remainder. When the same number is divided by 37, the remainder will be:

A. 1

B. 2

C. 8

D. 4

Answer:A

Explanation:

Let the Number be Y.

Then Y = 296 q + 75

= (37 x 8)q +(37 x 2) + 1

= 37 (8q + 2) + 1

Thus, when the number is divided by 37, the remainder is 1

Question: 14

In a division sum, the divisor is 10 times the quotient and 5 times the remainder. If the remainder is 46, what is the dividend?

A. 4236

B. 4306

C. 4336

D. 5336

Answer:D

Explanation:

Rem=46, :. Quotient = rem/2 = 23, :. divisor = rem * 5 = 230

number = (divisor * quotient) + remainder = (230*23) +46 = 575

Question: 15

A number is divided by 221, the remainder is 64. If the number be divided by 13 then remainder will be

A. 11
B. 12
C. 13
D. 14

Answer: B

Explanation:

Here, the first divisor
(221) is a multiple of second divisor (13)
Hence, required remainder = remainder obtained on dividing 64 by 13 = 12

THANK YOU