NUMBER SYSTEM

Numbers:

- In Decimal number system, there are ten symbols namely 0,1,2,3,4,5,6,7,8 and 9 called digits. A number is denoted by group of these digits called as numerals.

Face Value:

- Face value of a digit in a numeral is value of the digit itself.
- For example in 321, face value of 1 is 1, face value of 2 is 2 and face value of 3 is 3.

Place Value:

- Place value of a digit in a numeral is value of the digit multiplied by 10^n where n starts from 0.
- For example in 321:

  Place value of $1 = 1 \times 10^0 = 1 \times 1 = 1$

  Place value of $2 = 2 \times 10^1 = 2 \times 10 = 20$

  Place value of $3 = 3 \times 10^2 = 3 \times 100 = 300$

Types of Numbers:

(1)Natural Numbers - $n > 0$ where n is counting number; [1,2,3...]

(2)Whole Numbers - $n \geq 0$ where n is counting number; [0,1,2,3...].

0 is the only whole number which is not a natural number.
Every natural number is a whole number.

(3) **Integers** - $n \geq 0$ or $n \leq 0$ where n is counting number;...,-3,-2,-1,0,1,2,3... are integers.

Positive Integers - $n > 0$; [1,2,3...]

Negative Integers - $n < 0$; [-1,-2,-3...]

Non-Positive Integers - $n \leq 0$; [0,-1,-2,-3...]

Non-Negative Integers - $n \geq 0$; [0,1,2,3...]

- 0 is neither positive nor negative integer.

(4)Even Numbers - n / 2 = 0 where n is counting number; [0,2,4,...]

(5)Odd Numbers - n / 2 ≠ 0 where n is counting number; [1,3,5,...]

(6)Prime Numbers - Numbers which is divisible by themselves only apart from 1.

- 1 is not a prime number.
- To test a number p to be prime, find a whole number k such that $k > \sqrt{p}$. Get all prime numbers less than or equal to k and divide p with each of these prime numbers. If no number divides p exactly then p is a prime number otherwise it is not a prime number

- Example: 191 is prime number or not?

Solution:

- Step 1 : $14 > \sqrt{191}$
- Step 2 : Prime numbers less than 14 are 2,3,5,7,11 and 13.
- Step 3 : 191 is not divisible by any above prime number.
- Result : 191 is a prime number.

- Example: 187 is prime number or not?

Solution:

- Step 1 : $14 > \sqrt{187}$
- Step 2 : Prime numbers less than 14 are 2,3,5,7,11 and 13.
- Step 3 : 187 is divisible by 11.
- Result : 187 is not a prime number.

(7)Composite Numbers - Non-prime numbers > 1. For example, 4,6,8,9 etc.

- 1 is neither a prime number nor a composite number.
- 2 is the only even prime number.

(8)Co-Primes Numbers - Two natural numbers are co-primes if their H.C.F. is 1. For example, (2,3), (4,5) are co-primes.

Divisibility

✔ **Divisibility by 2** - A number is divisible by 2 if its unit digit is 0,2,4,6 or 8.

❑ **Example:** 64578 is divisible by 2 or not?

❑ **Solution:**

Step 1 - Unit digit is 8.

Result - 64578 is divisible by 2.

❑ **Example:** 64575 is divisible by 2 or not?

❑ **Solution:**

Step 1 - Unit digit is 5.

Result - 64575 is not divisible by 2.

✔ **Divisibility by 3** - A number is divisible by 3 if sum of its digits is completely divisible by 3

- **Example:** 64578 is divisible by 3 or not?
- **Solution:** Step 1 - Sum of its digits is 6 + 4 + 5 + 7 + 8 = 30 which is divisible by 3.

Result - 64578 is divisible by 3.

- **Example:** 64576 is divisible by 3 or not?
- **Solution:** Step 1 - Sum of its digits is 6 + 4 + 5 + 7 + 6 = 28 which is not divisible by 3.

Result - 64576 is not divisible by 3.

✔ **Divisibility by 4** - A number is divisible by 4 if number formed using its last two digits is completely divisible by 4.

Example: 64578 is divisible by 4 or not?

Solution:

Step 1 - number formed using its last two digits is 78

which is not divisible by 4.

Result - 64578 is not divisible by 4.

Example: 64580 is divisible by 4 or not?

Solution:

Step 1 - number formed using its last two digits is 80

which is divisible by 4.

Result - 64580 is divisible by 4.

✔ **Divisibility by 5** - A number is divisible by 5 if its unit digit is 0 or 5.

Example: 64578 is divisible by 5 or not?

Solution:

Step 1 - Unit digit is 8.

Result - 64578 is not divisible by 5.

Example: 64575 is divisible by 5 or not?

Solution:

Step 1 - Unit digit is 5.

Result - 64575 is divisible by 5.

✔ **Divisibility by 6** - A number is divisible by 6 if the number is divisible by both 2 and 3.

Example: 64578 is divisible by 6 or not?

Solution:

Step 1 - Unit digit is 8. Number is divisible by 2.

Step 2 - Sum of its digits is 6 + 4 + 5 + 7 + 8 = 30

which is divisible by 3.

Result - 64578 is divisible by 6.

Example: 64576 is divisible by 6 or not?

Solution:

Step 1 - Unit digit is 8. Number is divisible by 2.

Step 2 - Sum of its digits is 6 + 4 + 5 + 7 + 6 = 28

which is not divisible by 3.

Result - 64576 is not divisible by 6.

✔ **Divisibility by 8** - A number is divisible by 8 if number formed using its last three digits is completely divisible by 8.

Example: 64578 is divisible by 8 or not?
Solution:
Step 1 - number formed using its last three digits is 578
which is not divisible by 8.
Result - 64578 is not divisible by 8.

Example: 64576 is divisible by 8 or not?
Solution:
Step 1 - number formed using its last three digits is 576
which is divisible by 8.
Result - 64576 is divisible by 8.

✔ **Divisibility by 9** - A number is divisible by 9 if sum of its digits is completely divisible by 9.

Example: 64579 is divisible by 9 or not?

Solution:

Step 1 - Sum of its digits is 6 + 4 + 5 + 7 + 9 = 31

which is not divisible by 9.

Result - 64579 is not divisible by 9.

Example: 64575 is divisible by 9 or not?

Solution:

Step 1 - Sum of its digits is 6 + 4 + 5 + 7 + 5 = 27

which is divisible by 9.

Result - 64575 is divisible by 9.

✔ **Divisibility by 10** - A number is divisible by 10 if its unit digit is 0.

Example: 64575 is divisible by 10 or not?

Solution:

Step 1 - Unit digit is 5.

Result - 64578 is not divisible by 10.

Example: 64570 is divisible by 10 or not?

Solution:

Step 1 - Unit digit is 0.

Result - 64570 is divisible by 10.

✔ **Divisibility by 11** - A number is divisible by 11 if difference between sum of digits at odd places and sum of digits at even places is either 0 or is divisible by 11.

Example: 64575 is divisible by 11 or not?

Solution:

Step 1 - difference between sum of digits at odd places and sum of digits at even places = (6+5+5) - (4+7) = 5 which is not divisible by 11.

Result - 64575 is not divisible by 11.

Example: 64075 is divisible by 11 or not?

Solution:

Step 1 - difference between sum of digits at odd places and sum of digits at even places = (6+0+5) - (4+7) = 0.

Result - 64075 is divisible by 11.

Tips on Division:

If a number n is divisible by two co-primes numbers a, b then n is divisible by ab.

- (a-b) always divides $(a^n - b^n)$ if n is a natural number.
- (a+b) always divides $(a^n - b^n)$ if n is an even number.
- (a+b) always divides $(a^n + b^n)$ if n is an odd number.

Division Algorithm:

When a number is divided by another number then

Dividend = (Divisor x Quotient) + Reminder

Series:

Following are formulaes for basic number series:

- $(1+2+3+...+n) = \frac{n(n+1)}{2}$

- $(1^2+2^2+3^2+...+n^2) = \frac{n(n+1)(2n+1)}{6}$

- $(1^3+2^3+3^3+...+n^3) = \frac{n^2(n+1)^2}{4}$

Basic Formulae

- $(a + b)^2 = a^2 + b^2 + 2ab$
- $(a - b)^2 = a^2 + b^2 - 2ab$
- $(a + b)^2 - (a - b)^2 = 4ab$
- $(a + b)^2 + (a - b)^2 = 2(a^2 + b^2)$
- $(a^2 - b^2) = (a + b)(a - b)$
- $(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$
- $(a^3 + b^3) = (a + b)(a^2 - ab + b^2)$
- $(a^3 - b^3) = (a - b)(a^2 + ab + b^2)$
- $(a^3 + b^3 + c^3 - 3abc) = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$

PROBLEMS

- Which of the following is a prime number?

A - 187

B - 811

C - 341

D - 437

Solution:

Step 1. Find a whole number k such that k2 > n for each number.

- 142 > 187.
- 302 > 811.
- 192 > 341.
- 212 > 437.

Step 2. Get all prime numbers which are < k

- 14 - 2 , 3, 5, 7, 11, 13
- 30 - 2 , 3, 5, 7, 11, 13, 17, 19, 23, 29
- 19 - 2 , 3, 5, 7, 11, 13, 17
- 21 - 2 , 3, 5, 7, 11, 13, 17, 19

Step 3. Check divisibility of each number

- with prime numbers which are < k.
- 187 is divisible by 11.
- 811 is not divisible by any prime number.
- 341 is divisible by 11.
- 437 is divisible by 19.

- Result: 811 is the prime number.

- Which of the following is the output of 6894 x 99 ?

A - 685506

B - 682506

C - 683506

D - 684506

Answer : B

Solution:

- 6894 x 99

  = 6894 x (100 - 1)

  = 6894 x 100 - 6894 x 1

  = 689400 - 6894

  = 682506

- **Which of the following is the output of 685798 x 125 ?**

A - 85724750

B - 8225750

C - 8225950

D - 8224760

- Answer : A

Solution:

- 685798 x 125

  = 685798 x 5^3

  = 685798 x (10/2)^3

  = (685798 x 10^3) / 2^3

  = 685798000 / 8

  = 85724750

- **Which of the following is the output of 869 x 738 + 869 x 262 ?**

A - 262000

B - 738000

C - 969000

D - 869000

- Answer : D

Solution:

869 x 738 + 869 x 262

= 869 x (738 + 262)

= 869 x 1000

= 869000

- **Which of the following is the output of 1496 x 1496 ?**

A - 3338016

B - 2238016

C - 2248016

D - 2258016

- Answer : B

Solution:

1496 x 1496

= (1496)^2

= (1500-4)^2

= 1500^2 + 4^2 - 2 x 1500 x 4

= 2250000 + 16 - 12000

= 2238016

- **$1000^9 \div 10^{26} = ?$**

A - 0

B - 1

C - 10

D - 1000

- Answer : C

Solution:

= 1000^9/10^26

= (10^3)^9/10^26

= 10^27/10^26

= 10^(27 – 26)

= 10

- **Which of the following is the output of**

(578 x 578 x 578 + 432 x 432 x 432)/(578 x 578 - 578 x 432 + 432 x432)

A - 2000

B - 4000

C - 3000

D - 1000

- Answer : D

Solution:

(578 x 578 x 578 + 432 x 432 x 432) / (578 x 578 - 578 x 432 + 432 x432)

Let's have a = 578, b = 432

Now expression is (a^3 + b^3) / (a^2 - ab + b^2)

= a + b

= 578 + 432

= 1000

- Which of the following numbers is completely divisible by 45?

A - 32765

B - 20000

C - 2025

D - 20280

- Answer : C

Solution:

45 = 5 x 9

So, co-primes are 5 and 9

For divisibility, the unit digits must be 0 or 5 and sum of digits must be divisible by 9.

The unit digit of 2025 is 5 and sum of digits is divisible by 9

Therefore, 2025 is completely divisible by 45.

- **Which of the following cannot be the square of a natural number?**

A - 75625

B - 143642

C - 30976

D - 28561

- Answer : B

143642 cannot be the square of a natural number because the square of a natural number never ends in 2.

- **What will be unit digit in $(3157)^{754}$?**

A - 8

B - 9

C - 7

D - 6

Answer : B

- unit digit in (3157)^754

= unit digit in (7)^754

= unit digit in (7^4)^188 x 7^2

= unit digit in (1 x 49)

= 9

- Thus Unit digit in (3157)754 is 9.

- We've used following formulae here:

- Unit digit in 7^1 = 7
- Unit digit in 7^2 = 9
- Unit digit in 7^3 = 3
- Unit digit in 7^4 = 1
- Unit digit in 7^5 = 7
- Unit digit in 7^6 = 9
- Unit digit in 7^7 = 3
- Unit digit in 7^8 = 1

- So pattern is 7-9-3-1. This pattern works for all numbers. So Unit digit in ((7)^4)^n) will be 1.

- **What will be unit digit in 658 x 539 x 436 x 312?**

A - 8

B - 9

C - 4

D - 6

- Answer : C

Solution:

Multiply unit digits of each number.

Unit digit in 658 x 539 x 436 x 312

= Unit digit in 8 x 9 x 6 x 2.

= Unit digit in 864.

= 4.

- **What will be unit digit in $3^{57} \times 6^{41} \times 7^{63}$?**

A - 8

B - 9

C - 4

D - 6

- Answer : C

Solution:

3^57 = (3^4)^14 x 3

So Unit digit in 3^57

= Unit digit in 1 x 3

= 3

6^41 = (6^4)^10 x 6

So Unit digit in 6^41

= Unit digit in 6 x 6

= 6

7^63 = (7^4)^15 x 7^3

So Unit digit in 7^63

= Unit digit in 1 x 343

= 3

So Unit digit in 3^57 x 6^41 x 7^63

= Unit digit in 3 x 6 x 3

= 4

- We've used following formulae here:

Unit digit in 3^4 = 1

Unit digit in 6^4 = 6

Unit digit in 7^4 = 1

So Unit digit

- in ((3)^4)^n) will be 1.
- in ((6)^4)^n) will be 6.
- in ((7)^4)^n) will be 1.

- **Which of the following is the output of 43986 x 625 ?**

A - 27491450

B - 27491350

C - 27491250

D - 27491750

- Answer : C

Solution:

43986 x 625

= 43986 x 5^4

= 43986 x (10/2)^4

= (43986 x 10^4) / 2^4

= 439860000 / 16

= 27491250

- **If 5358 x 51 = y , then what is y?**

A - 273268

B - 273258

C - 273248

D - 273368

- Answer : B

Solution:

y =5358 x 51

=5358 x (50 + 1)

=5358 x 50 + 5358

=267900 + 5358

=273258

- **If $a - b = 5$ and $a^2 + b^2 = 41$, what is ab?**

  A - 5

  B - 7

  C - 8

  D - 16

- Answer : C

Solution:

Using formulae $(a-b)^2 = a^2 + b^2 - 2ab$

$\Rightarrow ab = (a^2 + b^2 - (a-b)^2) / 2$

$\Rightarrow ab = [41 - 25] / 2 = 8$

A number is as much greater than 36 as is less than 86.Find the number

A. 61
B. 56
C. 63
D. 52

ANSWER: A

Sol: Let x be the required number.

Given, x is as much greater than 36 as is less than 86.

$$x-36 = 86-x$$
$$x+x = 86+36$$
$$2x = 122$$
$$x = 122/2 = 61$$

The sum of two numbers is 184. If one-third of the one exceeds one-seventh of the other by 8, find the smaller number.

A. 61
B. 32
C. 72
D. 52

ANSWER: C

Let the numbers be x and (184-x)

$\Rightarrow \frac{1}{3}x - \frac{184-x}{7} = 8$

$\Rightarrow$x=72 Thus the numbers are 72 and 112 Hence the smaller number is 72

The average of four consecutive even numbers is 27. Find the largest of these numbers.

A. 24
B. 30
C. 27
D. 31

ANSWER: B

Sol: Given that the average of four consecutive even numbers is 27

Let the four consecutive even numbers be $x-2, x, x+2, x+4$

$$\text{The average} = \frac{(x-2)+x+(x+2)+(x+4)}{4}$$

$$\text{Therefore, } 27 = \frac{4x+4}{4}$$

$$\Longrightarrow 27 = x+1$$

$$\Longrightarrow x = 26$$

The largest number is $x+4=26+4=30$

If three numbers are added in pairs, the sums equal 10,19 and 21.Find the least number.

A. 6
B. 15
C. 10
D. 4

ANSWER: D

Sol: let the numbers be x ,y & z

According to question

x +y =10 ……..(1)

y+ z= 19 ……(2)

z+ x= 21 …….(3)

Subtracting (1) from (2)

we get z -x = 9……(4)

Subtracting (3) from (2)

we get x - y = 2 ……(5)

Adding (5) & (1)

we get 2x= 12 implies

x= 6

Substituting x = 6 in (1) we get

y=4

Substituting y= 4 in (2) we get

z=15

Therefore the numbers are 6,4 & 15

The least number is 4.

The difference between a number and its three-fifth is 50. What is the number?

A. 75

B. 100

C. 125

D. None of these

ANSWER: C

Sol: Let the number be ‘x’

According to the question,

$$\Rightarrow x - \frac{3}{5}x = 50$$

$$\Rightarrow \frac{2}{5}x = 50$$

$$\Rightarrow x = 125$$

A number is doubled and 9 is added. If resultant is trebled, it becomes 75. What is that number

A. 8

B. 10

C. 12

D. 14

Answer: A

Explanation:

=> 3(2x+9) = 75
=> 2x+9 = 25
=> x = 8

If the sum of a number and its square is 182, what is the number ?

A. 15

B. 26

C. 13

D. 91

Answer: C

Let the number be x
Then,

$$\Rightarrow x + x^2 = 182$$
$$\Rightarrow x + x^2 - 182 = 0$$
$$\Rightarrow (x + 14)(x - 13) = 0$$
$$\Rightarrow x = 13$$

Twenty times a positive integer is less than its square by 96. What is the integer?

A. 20

B. 24

C. 30

D. Cannot be determined

ANSWER: B

Sol: Let the positive integer be x, then

$\Rightarrow x^2-96=20x$

$\Longrightarrow x^2-20x-96=0$

$\Longrightarrow x^2-24x+4x-96=0$

$\Longrightarrow x(x-24)+4(x-24)=0$

$\Longrightarrow (x-24)(x+4)=0$

$\Longrightarrow x=24 \text{ and } x=-4$

$\because x>0 \quad \therefore x=24$

Find a positive number which when increased by 17 is equal to 60 times the reciprocal of the number.

A. 3

B. 10

C. 17

D. 20

Answer: A

Sol: Let the number be '*x*'.

Then, $\Rightarrow x+17=(60/x)$

$\Rightarrow x^2+17x-60=0$

$\Rightarrow (x+20)(x-3)=0$

$\Rightarrow x=3$

The sum of two numbers is 22. Five times one number is equal to 6 times the other. The bigger of the two numbers is:

A. 10

B. 12

C. 15

D. 16

ANSWER: B

Sol: The sum of two numbers is 22,

$x+y=22$ .....(1)

Five times one number is equal to 6 times the other,

$5x=6y$ .....(2)

From equation 1^{st},

$5(22-y)=6y$

$110-5y=6y$

$11y=110$

$y=10$

Put, the value of y in equation 1^{st},

$10+x=22$

$x=12$

$\therefore$ Bigger of two numbers is 12

One-fifth of a number is equal to 5/8 of another number. If 35 is added to the first number, it becomes four times of the second number. The second number is:

A. 25

B. 40

C. 70

D. 125

ANSWER: B

Sol: Let the first number be x and the second number be y.

Given : (1/5)**x** = (5/8)**y**

x = (25/8)**y**

It is also given that, **x** + 35 = 4**y**

Replacing the value of x we had previously obtained,

(25/8)**y** + 35 = 4**y**

(25/8)**y** - 4**y** = -35

(25y - 32**y**)/8 = -35

-7**y** = -280

y = 40 and replacing this value in the first equation,

x = 125

Therefore, the first number is 125 and the second number is 40

If the sum of two numbers is 33 and their difference is 15, the smaller number is:

A. 9

B. 12

C. 15

D. 18

ANSWER: A

Sol: **Let the numbers be x and y.**

Since,

x+y=33 .....(1)

x−y=15 .....(2)

On solving equation (1) and (2), we get

x=24,y=9

Hence, the smallest number is 9.

The sum of two numbers is 40 and their difference is 4. The ratio of the numbers is:

A. 22:9

B. 11:18

C. 21:19

D. 11:9

ANSWER: D

Sol: Let the two numbers be x and y:

x+y=40 (1)

x-y=4 (2)

(1)+(2): 2x=44, x=22

Substitute x=22 into (1):

y+22=40, y=18

Ratio: $\frac{x}{y} = \frac{22}{18} = \frac{11}{9} \Rightarrow x : y = 11 : 9$

Two numbers differ by 5. If their product is 336, then the sum of the two numbers is:

A. 39

B. 37

C. 15

D. 18

ANSWER: B

Sol: Let numbers are x and y

⇒x−y=5 and xy=336

Now using identity

(x+y)^2=(x−y)^2+4xy

=25+4(336)

=25+1344

=1369

⇒x+y=37

The sum of three consecutive odd numbers is 20 more than the first of these numbers. What is the middle number?

A. 7

B. 9

C. 11

D. Data inadequate

ANSWER: B

Sol: Let the numbers are x,(x+2) & (x+4)

$\Rightarrow x+x+2+x+4=x+20$

$\Rightarrow 2x=14$

$\Rightarrow x=7$

Middle number $=x+2=7+2=9$

The sum of three consecutive multiples of 3 is 72. What is the largest number?

A. 21

B. 24

C. 27

D. 36

ANSWER: C

Sol: Let the numbers be 3x, 3x + 3 and 3x + 6.

Then,

3x + (3x + 3) + (3x + 6) = 72

9x = 63

x = 7

Largest number = 3x + 6 = 27.

=> Second largest number = 27 - 3 = 24

In a two-digit number, the digit in the unit's place is four times the digit in the ten's place and sum of the digits is equal to 10. What is the number?

A. 14

B. 41

C. 82

D. None of these

ANSWER: D

Sol: Let's take number as 10x+y

As per question,

y=4x, and

x+y=10

So, x+4x=10

5x=10

x=2

y=2×4=8

So, number is 10x+y=10×2+8=28

The denominator of a fraction is 3 more than the numerator. If the numerator as well as the denominator is increased by 4, the fraction becomes 4/5. What was the original fraction?

A. 8/11

B. 5/8

C. 10/13

D. 7/10

ANSWER: A

Sol: Let the numerator be x Then, denominator = x + 3.

Now. (x + 4)/(x + 3) +4 = 4/5

=> 5 (x + 4) = 4(x + 7)

=> x = 8.

The fraction is 8/11.

50 is divided into two parts such that the sum of their reciprocals is 1/12. Find the greatest part?

A. 20

B. 10

C. 30

D. 40

ANSWER: C

Sol: Now according to given conditions,

X+Y=50,———-(1)

And

1/X+1/Y=1/12—————-(2)

Solving equation(2),we get,

(X+Y)/XY=1/12

50/XY=1/12—-(from eq(1))

XY=600———-(3)

Now solving eq(1) and (3) we get

X =30 and Y=20.

Therefore the two parts in which 50 is divided are 30 and 20.

Which of the following numbers is divisibility by 3 ?

A. 541326

B. 5967013

C. 15689

D. 3578

ANSWER: A

Sol:

That is 541326 is the only one coz divisibility rule of 3 is such that if the sum of digits of a number is divisible by 3 the number is also divisible by 3. And sum of digits of 541326 is 21 which is divisible by 3 hence number is also divisible by 3.

What least value must be assigned to * so that the number 197*5462 is divisible by 9 ?

A. 6

B. 3

C. 5

D. 2

ANSWER: D

Sol: First keep in mind that we can calculate this by easy method

just add all those numbers

i.e.,1+9+7+5+4+6+2=70

So 70 will not divided by 9

So we can add the number So that can divided easily

for that add 1 now 71 not possible

add 2 now 72 so 72/9=8 now possible

So put 2 in * position

Which of the following numbers is divisibility by 4 ?

A. 67920594

B. 618703572

C. 15000689

D. 3517398

ANSWER: B

Divisibility by 4 - A number is divisible by 4 if number formed using its last two digits is completely divisible by 4.

Here 72 is divisible by 4

Which digits should come in place of * and # if the number 62684*# is divisible by both 8 and 5 ?

A. 6268450

B. 6268440

C. 6268430

D. 6268460

ANSWER: B

Divisibility by 5 - A number is divisible by 5 if its unit digit is 0 or 5.

Divisibility by 8 - A number is divisible by 8 if number formed using its last three digits is completely divisible by 8.

Which of the following number is divisible by 24 ?

A. 35718

B. 63810

C. 537804

D. 3125736

Answer: D

Sol:

24 = 3 × 8, where 3 and 8 co-prime
Clearly, 35718 is not divisible by 8, as 718 is not divisible by 8
Similarly, 63810 is not divisible by 8 and 537804 is not divisible by 8
Consider option (D),
Sum of digits = (3 + 1 + 2 + 5 + 7 + 3 + 6) = 27, which is divisible by 3
Also, 736 is divisible by 8
∴ 3125736 is divisible by (3 × 8), *i.e.,* 24

THANK YOU