

1. Which one of the following is not a prime number?

[A.31](#)

[B.61](#)

[C.71](#)

[D.91](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

91 is divisible by 7. So, it is not a prime number.

2. $(112 \times 5^4) = ?$

[A.67000](#)

[B.70000](#)

[C.76500](#)

[D.77200](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$(112 \times 5^4) = 112 \times \left(\frac{10}{2}\right)^4 = \frac{112 \times 10^4}{2^4} = \frac{1120000}{16} = 70000$$

3. It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?

[A. \$\(2^{16} + 1\)\$](#)

[B. \$\(2^{16} - 1\)\$](#)

[C. \$\(7 \times 2^{23}\)\$](#)

[D. \$\(2^{96} + 1\)\$](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

Let $2^{32} = x$. Then, $(2^{32} + 1) = (x + 1)$.

Let $(x + 1)$ be completely divisible by the natural number N. Then,

$(2^{96} + 1) = [(2^{32})^3 + 1] = (x^3 + 1) = (x + 1)(x^2 - x + 1)$, which is completely divisible by N, since $(x + 1)$ is divisible by N.

4. What least number must be added to 1056, so that the sum is completely divisible by 23 ?

[A.2](#)

[B.3](#)

[C.18](#)

[D.21](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\begin{array}{r} 23) \ 1056 \ (45 \\ \underline{92} \\ 136 \\ \underline{115} \\ 21 \\ \underline{21} \\ 0 \end{array}$$

$$\begin{aligned} \text{Required number} &= (23 - 21) \\ &= 2. \end{aligned}$$

5. $1397 \times 1397 = ?$

[A.](#)1951609

[B.](#)1981709

[C.](#)18362619

[D.](#)2031719

[E.](#)None of these

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\begin{aligned} 1397 \times 1397 &= (1397)^2 \\ &= (1400 - 3)^2 \\ &= (1400)^2 + (3)^2 - (2 \times 1400 \times 3) \\ &= 1960000 + 9 - 8400 \\ &= 1960009 - 8400 \\ &= 1951609. \end{aligned}$$

6. How many of the following numbers are divisible by 132 ?

264, 396, 462, 792, 968, 2178, 5184, 6336

[A.](#)4

[B.](#)5

[C.](#)6

[D.](#)7

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$132 = 4 \times 3 \times 11$$

So, if the number divisible by all the three number 4, 3 and 11, then the number is divisible by 132 also.

$$264 \rightarrow 11, 3, 4 \ (/)$$

$$396 \rightarrow 11, 3, 4 \ (/)$$

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$$462 \rightarrow 11,3 \text{ (X)}$$

$$792 \rightarrow 11,3,4 \text{ (/)}$$

$$968 \rightarrow 11,4 \text{ (X)}$$

$$2178 \rightarrow 11,3 \text{ (X)}$$

$$5184 \rightarrow 3,4 \text{ (X)}$$

$$6336 \rightarrow 11,3,4 \text{ (/)}$$

Therefore the following numbers are divisible by 132 : 264, 396, 792 and 6336.

Required number of number = 4.

7. $(935421 \times 625) = ?$

[A.575648125](#)

[B.584638125](#)

[C.584649125](#)

[D.585628125](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\begin{aligned} 935421 \times 625 &= 935421 \times 5^4 = 935421 \times \left(\frac{10}{2}\right)^4 \\ &= \frac{935421 \times 10^4}{2^4} = \frac{9354210000}{16} \\ &= 584638125 \end{aligned}$$

8. The largest 4 digit number exactly divisible by 88 is:

[A.9944](#)

[B.9768](#)

[C.9988](#)

[D.8888](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

Largest 4-digit number = 9999

$$\begin{array}{r} 88 \overline{) 9999} \quad (113 \\ \underline{88} \end{array}$$

$$\begin{array}{r} \text{----} \\ 119 \\ 88 \\ \text{----} \\ 319 \\ 264 \\ \text{---} \\ 55 \\ \text{---} \end{array}$$

$$\begin{aligned} \text{Required number} &= (9999 - 55) \\ &= 9944. \end{aligned}$$

9. Which of the following is a prime number ?

[A.33](#)

[B.81](#)

[C.93](#)

[D.97](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

Clearly, 97 is a prime number.

10. What is the unit digit in $\{(6374)^{1793} \times (625)^{317} \times (341^{491})\}$?

[A.0](#)

[B.2](#)

[C.3](#)

[D.5](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\text{Unit digit in } (6374)^{1793} = \text{Unit digit in } (4)^{1793}$$

$$= \text{Unit digit in } [(4^2)^{896} \times 4]$$

$$= \text{Unit digit in } (6 \times 4) = 4$$

$$\text{Unit digit in } (625)^{317} = \text{Unit digit in } (5)^{317} = 5$$

$$\text{Unit digit in } (341)^{491} = \text{Unit digit in } (1)^{491} = 1$$

$$\text{Required digit} = \text{Unit digit in } (4 \times 5 \times 1) = 0.$$

11. $5358 \times 51 = ?$

[A.273258](#)

[B.273268](#)

[C.273348](#)

[D.273358](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\begin{aligned} 5358 \times 51 &= 5358 \times (50 + 1) \\ &= 5358 \times 50 + 5358 \times 1 \\ &= 267900 + 5358 \\ &= 273258. \end{aligned}$$

12. The sum of first five prime numbers is:

[A.](#) 11

[B.](#) 18

[C.](#) 26

[D.](#) 28

[Answer & Explanation](#)

Answer: Option D

Explanation:

Required sum = $(2 + 3 + 5 + 7 + 11) = 28$.

Note: 1 is not a prime number.

Definition: A prime number (or a prime) is a natural number that has exactly two distinct natural number divisors: 1 and itself.

13. The difference of two numbers is 1365. On dividing the larger number by the smaller, we get 6 as quotient and the 15 as remainder. What is the smaller number ?

[A.](#) 240

[B.](#) 270

[C.](#) 295

[D.](#) 360

[Answer & Explanation](#)

Answer: Option B

Explanation:

Let the smaller number be x . Then larger number = $(x + 1365)$.

$$\therefore x + 1365 = 6x + 15$$

$$\Rightarrow 5x = 1350$$

$$\Rightarrow x = 270$$

$$\therefore \text{Smaller number} = 270.$$

14. $(12)^3 \times 6^4 \div 432 = ?$

[A.](#) 5184

[B.](#) 5060

[C.5148](#)

[D.5084](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\text{Given Exp.} = \frac{(12)^3 \times 6^4}{432} = \frac{(12)^3 \times 6^4}{12 \times 6^2} = (12)^2 \times 6^2 = (72)^2 = 5184$$

15. $72519 \times 9999 = ?$

[A.725117481](#)

[B.674217481](#)

[C.685126481](#)

[D.696217481](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\begin{aligned} 72519 \times 9999 &= 72519 \times (10000 - 1) \\ &= 72519 \times 10000 - 72519 \times 1 \\ &= 725190000 - 72519 \\ &= 725117481. \end{aligned}$$

16. If the number $517 * 324$ is completely divisible by 3, then the smallest whole number in the place of * will be:

[A.0](#)

[B.1](#)

[C.2](#)

[D. None of these](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

Sum of digits $= (5 + 1 + 7 + x + 3 + 2 + 4) = (22 + x)$, which must be divisible by 3.

$$\therefore x = 2.$$

17. The smallest 3 digit prime number is:

[A.103](#)

[B.107](#)

[C.109](#)

[D.113](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option E

Explanation:

The smallest 3-digit number is 100, which is divisible by 2.

∴ 100 is not a prime number.

$101 < 11$ and 101 is not divisible by any of the prime numbers 2, 3, 5, 7, 11.

∴ 101 is a prime number.

Hence 101 is the smallest 3-digit prime number.

18. Which one of the following numbers is exactly divisible by 11?

[A.235641](#)

[B.245642](#)

[C.315624](#)

[D.415624](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$(4 + 5 + 2) - (1 + 6 + 3) = 1$, not divisible by 11.

$(2 + 6 + 4) - (4 + 5 + 2) = 1$, not divisible by 11.

$(4 + 6 + 1) - (2 + 5 + 3) = 1$, not divisible by 11.

$(4 + 6 + 1) - (2 + 5 + 4) = 0$, So, 415624 is divisible by 11.

19. (?) - 19657 - 33994 = 9999

[A.63650](#)

[B.53760](#)

[C.59640](#)

[D.61560](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

19657	Let $x - 53651 = 9999$
33994	Then, $x = 9999 + 53651 = 63650$

53651	

20. The sum of first 45 natural numbers is:

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[A.1035](#)

[B.1280](#)

[C.2070](#)

[D.2140](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

Let $S_n = (1 + 2 + 3 + \dots + 45)$. This is an A.P. in which $a = 1$, $d = 1$, $n = 45$.

$$S_n = \frac{n}{2}[2a + (n - 1)d] = \frac{45}{2} \times [2 \times 1 + (45 - 1) \times 1] = \left(\frac{45}{2} \times 46 \right) = (45 \times 23)$$

$$= 45 \times (20 + 3)$$

$$= 45 \times 20 + 45 \times 3$$

$$= 900 + 135$$

$$= 1035.$$

Shortcut Method:

$$S_n = \frac{n(n + 1)}{2} = \frac{45(45 + 1)}{2} = 1035.$$

11. $5358 \times 51 = ?$

[A.273258](#)

[B.273268](#)

[C.273348](#)

[D.273358](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\begin{aligned} 5358 \times 51 &= 5358 \times (50 + 1) \\ &= 5358 \times 50 + 5358 \times 1 \\ &= 267900 + 5358 \\ &= 273258. \end{aligned}$$

12. The sum of first five prime numbers is:

[A.11](#)

[B.18](#)

[C.26](#)

[D.28](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

Required sum = $(2 + 3 + 5 + 7 + 11) = 28$.

Note: 1 is not a prime number.

Definition: A prime number (or a prime) is a natural number that has exactly two distinct natural number divisors: 1 and itself.

-
13. The difference of two numbers is 1365. On dividing the larger number by the smaller, we get 6 as quotient and the 15 as remainder. What is the smaller number ?

[A.240](#)

[B.270](#)

[C.295](#)

[D.360](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

Let the smaller number be x . Then larger number = $(x + 1365)$.

$$\therefore x + 1365 = 6x + 15$$

$$\Rightarrow 5x = 1350$$

$$\Rightarrow x = 270$$

$$\therefore \text{Smaller number} = 270.$$

-
14. $(12)^3 \times 6^4 \div 432 = ?$

[A.5184](#)

[B.5060](#)

[C.5148](#)

[D.5084](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\text{Given Exp.} = \frac{(12)^3 \times 6^4}{432} = \frac{(12)^3 \times 6^4}{12 \times 6^2} = (12)^2 \times 6^2 = (72)^2 = 5184$$

-
15. $72519 \times 9999 = ?$

[A.725117481](#)

[B.674217481](#)

[C.685126481](#)

[D.696217481](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\begin{aligned}72519 \times 9999 &= 72519 \times (10000 - 1) \\&= 72519 \times 10000 - 72519 \times 1 \\&= 725190000 - 72519 \\&= 725117481.\end{aligned}$$

16. If the number $517 * 324$ is completely divisible by 3, then the smallest whole number in the place of * will be:

[A.](#)0

[B.](#)1

[C.](#)2

[D.](#)None of these

[Answer & Explanation](#)

Answer: Option C

Explanation:

Sum of digits = $(5 + 1 + 7 + x + 3 + 2 + 4) = (22 + x)$, which must be divisible by 3.

$$\therefore x = 2.$$

17. The smallest 3 digit prime number is:

[A.](#)103

[B.](#)107

[C.](#)109

[D.](#)113

[E.](#)None of these

[Answer & Explanation](#)

Answer: Option E

Explanation:

The smallest 3-digit number is 100, which is divisible by 2.

$\therefore$ 100 is not a prime number.

$101 < 11$ and 101 is not divisible by any of the prime numbers 2, 3, 5, 7, 11.

$\therefore$ 101 is a prime number.

Hence 101 is the smallest 3-digit prime number.

18. Which one of the following numbers is exactly divisible by 11?

[A.](#)235641

[B.](#)245642

[C.](#)315624

[D.](#)415624

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$(4 + 5 + 2) - (1 + 6 + 3) = 1, \text{ not divisible by } 11.$$

$$(2 + 6 + 4) - (4 + 5 + 2) = 1, \text{ not divisible by } 11.$$

$$(4 + 6 + 1) - (2 + 5 + 3) = 1, \text{ not divisible by } 11.$$

$$(4 + 6 + 1) - (2 + 5 + 4) = 0, \text{ So, } 415624 \text{ is divisible by } 11.$$

19. (?) - 19657 - 33994 = 9999

[A. 63650](#)

[B. 53760](#)

[C. 59640](#)

[D. 61560](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

19657	Let $x - 53651 = 9999$
33994	Then, $x = 9999 + 53651 = 63650$

53651	

20. The sum of first 45 natural numbers is:

[A. 1035](#)

[B. 1280](#)

[C. 2070](#)

[D. 2140](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

Let $S_n = (1 + 2 + 3 + \dots + 45)$. This is an A.P. in which $a = 1$, $d = 1$, $n = 45$.

$$S_n = \frac{n}{2} [2a + (n - 1)d] = \frac{45}{2} \times [2 \times 1 + (45 - 1) \times 1] = \left(\frac{45}{2} \times 46 \right) = (45 \times 23)$$

$$= 45 \times (20 + 3)$$

$$= 45 \times 20 + 45 \times 3$$

$$= 900 + 135$$

= 1035.

Shorcut Method:

$$S_n = \frac{n(n+1)}{2} = \frac{45(45+1)}{2} = 1035.$$

21. Which of the following number is divisible by 24 ?

A. 35718

B. 63810

C. 537804

D. 3125736

Answer & Explanation

Answer: Option **D**

Explanation:

24 = 3 x 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.

Cibsuper oart (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 x 8), i.e., 24.

22.
$$\frac{753 \times 753 + 247 \times 247 - 753 \times 247}{753 \times 753 \times 753 + 247 \times 247 \times 247} = ?$$

A. $\frac{1}{1000}$

B. $\frac{1}{506}$

C. $\frac{253}{500}$

D. None of these

Answer & Explanation

Answer: Option **A**

Explanation:

$$\text{Given Exp.} = \frac{(a^2 + b^2 - ab)}{(a^3 + b^3)} = \frac{1}{(a + b)} = \frac{1}{(753 + 247)} = \frac{1}{1000}$$

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23. $(?) + 3699 + 1985 - 2047 = 31111$

A. 34748

B. 27474

C. 30154

D. 27574

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

$$x + 3699 + 1985 - 2047 = 31111$$

$$\Rightarrow x + 3699 + 1985 = 31111 + 2047$$

$$\Rightarrow x + 5684 = 33158$$

$$\Rightarrow x = 33158 - 5684 = 27474.$$

24. If the number $481 * 673$ is completely divisible by 9, then the smallest whole number in place of * will be:

A. 2

B. 5

C. 6

D. 7

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

Sum of digits = $(4 + 8 + 1 + x + 6 + 7 + 3) = (29 + x)$, which must be divisible by 9.

$$\therefore x = 7.$$

25. The difference between the local value and the face value of 7 in the numeral 32675149 is

A. 75142

B. 64851

C. 5149

D. 69993

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

$$(\text{Local value of 7}) - (\text{Face value of 7}) = (70000 - 7) = 69993$$

26. The difference between a positive proper fraction and its reciprocal is $\frac{9}{20}$. The fraction is:

A. $\frac{3}{5}$

B. $\frac{3}{10}$

C. $\frac{4}{5}$

D. $\frac{4}{3}$

Answer & Explanation

Answer: Option **C**

Explanation:

Let the required fraction be x . Then $\frac{1}{x} - x = \frac{9}{20}$

$$\therefore \frac{1 - x^2}{x} = \frac{9}{20}$$

$$\Rightarrow 20 - 20x^2 = 9x$$

$$\Rightarrow 20x^2 + 9x - 20 = 0$$

$$\Rightarrow 20x^2 + 25x - 16x - 20 = 0$$

$$\Rightarrow 5x(4x + 5) - 4(4x + 5) = 0$$

$$\Rightarrow (4x + 5)(5x - 4) = 0$$

$$x = \frac{4}{5}$$

27. 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 & Explanation

Answer: Option **B**

Explanation:

Explanation:

$(x^n + 1)$ will be divisible by $(x + 1)$ only when n is odd.

$\therefore (67^{67} + 1)$ will be divisible by $(67 + 1)$

$\therefore (67^{67} + 1) + 66$, when divided by 68 will give 66 as remainder.

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

[A.0](#)

[B.1](#)

[C.2](#)

[D.4](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

Let the number be x and on dividing x by 5, we get k as quotient and 3 as remainder.

$$\therefore x = 5k + 3$$

$$\Rightarrow x^2 = (5k + 3)^2$$

$$= (25k^2 + 30k + 9)$$

$$= 5(5k^2 + 6k + 1) + 4$$

$\therefore$ On dividing x^2 by 5, we get 4 as remainder.

-
32. How many 3-digit numbers are completely divisible 6 ?

[A.149](#)

[B.150](#)

[C.151](#)

[D.166](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

3-digit number divisible by 6 are: 102, 108, 114,... , 996

This is an A.P. in which $a = 102$, $d = 6$ and $l = 996$

Let the number of terms be n . Then $t_n = 996$.

$$\therefore a + (n - 1)d = 996$$

$$\Rightarrow 102 + (n - 1) \times 6 = 996$$

$$\Rightarrow 6 \times (n - 1) = 894$$

$$\Rightarrow (n - 1) = 149$$

$$\Rightarrow n = 150$$

$\therefore$ Number of terms = 150.

33. How many natural numbers are there between 23 and 100 which are exactly divisible by 6 ?

[A.](#) 8

[B.](#) 11

[C.](#) 12

[D.](#) 13

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option D

Explanation:

Required numbers are 24, 30, 36, 42, ..., 96

This is an A.P. in which $a = 24$, $d = 6$ and $l = 96$

Let the number of terms in it be n .

$$\text{Then } t_n = 96 \Rightarrow a + (n - 1)d = 96$$

$$\Rightarrow 24 + (n - 1) \times 6 = 96$$

$$\Rightarrow (n - 1) \times 6 = 72$$

$$\Rightarrow (n - 1) = 12$$

$$\Rightarrow n = 13$$

Required number of numbers = 13.

34. How many of the following numbers are divisible by 3 but not by 9 ?

2133, 2343, 3474, 4131, 5286, 5340, 6336, 7347, 8115, 9276

[A.](#) 5

[B.](#) 6

[C.](#) 7

[D.](#) None of these

[Answer & Explanation](#)

Answer: Option B

Explanation:

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Marking (/) those which are divisible by 3 but not by 9 and the others by (X), by taking the sum of digits, we get:

2133 $\rightarrow$ 9 (X)

2343 $\rightarrow$ 12 (/)

3474 $\rightarrow$ 18 (X)

4131 $\rightarrow$ 9 (X)

5286 $\rightarrow$ 21 (/)

5340 $\rightarrow$ 12 (/)

6336 $\rightarrow$ 18 (X)

7347 $\rightarrow$ 21 (/)

8115 $\rightarrow$ 15 (/)

9276 $\rightarrow$ 24 (/)

Required number of numbers = 6.

35. $(963 + 476)^2 + (963 - 476)^2 = ?$
 $(963 \times 963 + 476 \times 476)$

[A.](#) 1449

[B.](#) 497

[C.](#) 2

[D.](#) 4

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$\text{Given Exp.} = \frac{(a+b)^2 + (a-b)^2}{(a^2 + b^2)} = \frac{2(a^2 + b^2)}{(a^2 + b^2)} = 2$$

36. How many 3 digit numbers are divisible by 6 in all ?

[A.](#) 149

[B.](#) 150

[C.](#) 151

[D.](#) 166

[Answer & Explanation](#)

Answer: Option B

Explanation:

Required numbers are 102, 108, 114, ... , 996

This is an A.P. in which $a = 102$, $d = 6$ and $l = 996$

Let the number of terms be n . Then,

$$a + (n - 1)d = 996$$

$$\Rightarrow 102 + (n - 1) \times 6 = 996$$

$$\Rightarrow 6 \times (n - 1) = 894$$

$$\Rightarrow (n - 1) = 149$$

$$\Rightarrow n = 150.$$

-
37. A 3-digit number $4a3$ is added to another 3-digit number 984 to give a 4-digit number $13b7$, which is divisible by 11. Then, $(a + b) = ?$

[A.10](#)

[B.11](#)

[C.12](#)

[D.15](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\begin{array}{rcl} 4 & a & 3 \\ 9 & 8 & 4 \\ 13 & b & 7 \end{array} \quad \left. \begin{array}{l} | \\ \} \\ | \end{array} \right\} \Rightarrow a + 8 = b \Rightarrow b - a = 8$$

$$\text{Also, } 13 \ b7 \text{ is divisible by } 11 \Rightarrow (7 + 3) - (b + 1) = (9 - b)$$

$$\Rightarrow (9 - b) = 0$$

$$\Rightarrow b = 9$$

$$\therefore (b = 9 \text{ and } a = 1) \Rightarrow (a + b) = 10.$$

-
38. $8597 - ? = 7429 - 4358$

[A.5426](#)

[B.5706](#)

[C.5526](#)

[D.5476](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$\begin{array}{r} 7429 \\ -4358 \\ \hline 3071 \\ \hline \end{array}$$

Let $8597 - x = 3071$
Then, $x = 8597 - 3071$
 $= 5526$

39. The smallest prime number is:

- [A.1](#) [B.2](#)
[C.3](#) [D.4](#)
[Answer & Explanation](#)

Answer: Option B

Explanation:

The smallest prime number is 2.

40. $(12345679 \times 72) = ?$

- [A.88888888](#) [B.888888888](#)
[C.898989898](#) [D.9999999998](#)
[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\begin{aligned} 12345679 \times 72 &= 12345679 \times (70 + 2) \\ &= 12345679 \times 70 + 12345679 \times 2 \\ &= 864197530 + 24691358 \\ &= 888888888 \end{aligned}$$

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

- [A.0](#) [B.3](#)
[C.5](#) [D.11](#)
[Answer & Explanation](#)

Answer: Option C

Explanation:

Let x be the number and y be the quotient. Then,

$$x = 357 \times y + 39$$

$$= (17 \times 21 \times y) + (17 \times 2) + 5$$

$$= 17 \times (21y + 2) + 5$$

∴ Required remainder = 5.

42. If the product $4864 \times 9P2$ is divisible by 12, then the value of P is:

[A.](#)2

[B.](#)5

[C.](#)6

[D.](#)8

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option E

Explanation:

Clearly, 4864 is divisible by 4.

So, $9P2$ must be divisible by 3. So, $(9 + P + 2)$ must be divisible by 3.

∴ $P = 1$.

43. Which one of the following is the common factor of $(47^{43} + 43^{43})$ and $(47^{47} + 43^{47})$?

[A.](#) $(47 - 43)$

[B.](#) $(47 + 43)$

[C.](#) $(47^{43} + 43^{43})$

[D.](#) None of these

[Answer & Explanation](#)

Answer: Option B

Explanation:

When n is odd, $(x^n + a^n)$ is always divisible by $(x + a)$.

∴ Each one of $(47^{43} + 43^{43})$ and $(47^{47} + 43^{47})$ is divisible by $(47 + 43)$.

44. $-84 \times 29 + 365 = ?$

[A.](#)2436

[B.](#)2801

[C.](#)-2801

[D.](#)-2071

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option D

Explanation:

Given Exp. = $-84 \times (30 - 1) + 365$

$$\begin{aligned} &= -(84 \times 30) + 84 + 365 \\ &= -2520 + 449 \\ &= -2071 \end{aligned}$$

-
45. 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.11](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\text{Let } x = 296q + 75$$

$$= (37 \times 8q + 37 \times 2) + 1$$

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

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

-
46. In dividing a number by 585, a student employed the method of short division. He divided the number successively by 5, 9 and 13 (factors 585) and got the remainders 4, 8, 12 respectively. If he had divided the number by 585, the remainder would have been

[A.24](#)

[B.144](#)

[C.292](#)

[D.584](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\begin{array}{r} 5 \mid x \\ \hline 9 \mid y - 4 \\ \hline 13 \mid z - 8 \\ \hline \mid 1 - 12 \end{array}$$

$$z = 13 \times 1 + 12 = 25$$

$$y = 9 \times z + 8 = 9 \times 25 + 8 = 233$$

$$x = 5 \times y + 4 = 5 \times 233 + 4 = 1169$$

$$\begin{array}{r} 585 \overline{) 1169} \quad (1 \\ \underline{585} \\ --- \\ 584 \\ --- \end{array}$$

Therefore, on dividing the number by 585, remainder = 584.

-
47. 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 ?

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[A.](#)4236

[B.](#)4306

[C.](#)4336

[D.](#)5336

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\text{Divisor} = (5 \times 46) = 230$$

$$\therefore 10 \times \text{Quotient} = 230 \Rightarrow \frac{230}{10} = 23$$

$$\text{Dividend} = (\text{Divisor} \times \text{Quotient}) + \text{Remainder}$$

$$= (230 \times 23) + 46$$

$$= 5290 + 46$$

$$= 5336.$$

48. $4500 \times ? = 3375$

[A.](#) $\frac{2}{5}$

[B.](#) $\frac{3}{4}$

[C.](#) $\frac{1}{4}$

[D.](#) $\frac{3}{5}$

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$4500 \times x = 3375 \Rightarrow x = \frac{3375}{4500} = \frac{3}{4}$$

49. What smallest number should be added to 4456 so that the sum is completely divisible by 6 ?

[A.](#)4

[B.](#)3

[C.](#)2

[D.](#)1

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$6 \overline{) 4456} \quad (742$$

$$\begin{array}{r} 42 \\ --- \\ 25 \\ 24 \\ --- \\ 16 \\ 12 \\ --- \\ 4 \end{array}$$

Therefore, Required number = $(6 - 4) = 2$.

50. What least number must be subtracted from 13601, so that the remainder is divisible by

87 ?

[A.23](#)

[B.31](#)

[C.29](#)

[D.37](#)

[E.49](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$\begin{array}{r} 87 \overline{) 13601} \quad (156 \\ 87 \\ ---- \\ 490 \\ 435 \\ ---- \\ 551 \\ 522 \\ ---- \\ 29 \\ --- \end{array}$$

Therefore, the required number = 29.

51. 476 ** 0 is divisible by both 3 and 11. The non-zero digits in the hundred's and ten's places are respectively:

[A.7 and 4](#)

[B.7 and 5](#)

[C.8 and 5](#)

[D.None of these](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

Let the given number be 476 xy 0.

Then $(4 + 7 + 6 + x + y + 0) = (17 + x + y)$ must be divisible by 3.

And, $(0 + x + 7) - (y + 6 + 4) = (x - y - 3)$ must be either 0 or 11.

$$x - y - 3 = 0 \Rightarrow y = x - 3$$

$$(17 + x + y) = (17 + x + x - 3) = (2x + 14)$$

$$\Rightarrow x = 2 \text{ or } x = 8.$$

$$\therefore x = 8 \text{ and } y = 5.$$

52. If the number 97215 * 6 is completely divisible by 11, then the smallest whole number in place of * will be:

[A.3](#)

[B.2](#)

[C.1](#)

[D.5](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

Given number = 97215x6

$(6 + 5 + 2 + 9) - (x + 1 + 7) = (14 - x)$, which must be divisible by 11.

$$\therefore x = 3$$

53. $(11^2 + 12^2 + 13^2 + \dots + 20^2) = ?$

[A.385](#)

[B.2485](#)

[C.2870](#)

[D.3255](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$(11^2 + 12^2 + 13^2 + \dots + 20^2) = (1^2 + 2^2 + 3^2 + \dots + 20^2) - (1^2 + 2^2 + 3^2 + \dots + 10^2)$$

$$= \left(\frac{20 \times 21 \times 41}{6} - \frac{10 \times 11 \times 21}{6} \right) \quad \left[\text{Ref: } (1^2 + 2^2 + 3^2 + \dots + n^2) = \frac{1}{6}n(n+1)(2n+1) \right]$$

$$= (2870 - 385)$$

$$= 2485.$$

54. If the number 5 * 2 is divisible by 6, then * = ?

[A.2](#)

[B.3](#)

[C.6](#)

[D.7](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$6 = 3 \times 2$. Clearly, $5 * 2$ is divisible by 2. Replace $*$ by x .

Then, $(5 + x + 2)$ must be divisible by 3. So, $x = 2$.

55. Which of the following numbers will completely divide $(49^{15} - 1)$?

[A.8](#)

[B.14](#)

[C.48](#)

[D.50](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$(x^n - 1)$ will be divisibly by $(x + 1)$ only when n is even.

$(49^{15} - 1) = \{(7^2)^{15} - 1\} = (7^{30} - 1)$, which is divisible by $(7 + 1)$, *i.e.*, 8.

56. $9 + \frac{3}{4} + 7 + \frac{2}{17} - \left(9 + \frac{1}{15}\right) = ?$

[A.](#) $7 + \frac{719}{1020}$

[B.](#) $9 + \frac{817}{1020}$

[C.](#) $9 + \frac{719}{1020}$

[D.](#) $7 + \frac{817}{1020}$

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\begin{aligned}\text{Given sum} &= 9 + \frac{3}{4} + 7 + \frac{2}{17} - \left(9 + \frac{1}{15}\right) \\ &= (9 + 7 - 9) + \left(\frac{3}{4} + \frac{2}{17} - \frac{1}{15}\right) \\ &= 7 + \frac{765 + 120 - 68}{1020} \\ &= 7 + \frac{817}{1020}\end{aligned}$$

57. $\left(1 - \frac{1}{n}\right) + \left(1 - \frac{2}{n}\right) + \left(1 - \frac{3}{n}\right) + \dots$ up to n terms = ?

[A.](#) $\frac{1}{2}n$

[B.](#) $\frac{1}{2}(n - 1)$

[C.](#) $\frac{1}{2}n(n - 1)$

[D.](#) None of these

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\text{Given sum} = (1 + 1 + 1 + \dots \text{ to } n \text{ terms}) - \left(\frac{1}{n} + \frac{2}{n} + \frac{3}{n} + \dots \text{ to } n \text{ terms} \right)$$

$$= n - \frac{n}{2} \left(\frac{1 + 1}{1} \right) \quad [\text{Ref: } n\text{th terms} = (n/n) = 1]$$

$$= n - \frac{n + 1}{2}$$

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

58. On dividing 2272 as well as 875 by 3-digit number N , we get the same remainder. The sum of the digits of N is:

[A.](#) 10

[B.](#) 11

[C.](#) 12

[D.](#) 13

[Answer & Explanation](#)

Answer: Option A

Explanation:

Clearly, $(2272 - 875) = 1397$, is exactly divisible by N .

Now, $1397 = 11 \times 127$

∴ The required 3-digit number is 127, the sum of whose digits is 10.

59. A boy multiplied 987 by a certain number and obtained 559981 as his answer. If in the answer both 98 are wrong and the other digits are correct, then the correct answer would be:

[A.](#) 553681

[B.](#) 555181

[C.](#) 555681

[D.](#) 556581

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$987 = 3 \times 7 \times 47$$

So, the required number must be divisible by each one of 3, 7, 47

553681 $\rightarrow$ (Sum of digits = 28, not divisible by 3)

555181 $\rightarrow$ (Sum of digits = 25, not divisible by 3)

555681 is divisible by 3, 7, 47.

60. How many prime numbers are less than 50 ?

[A.](#) 16

[B.](#) 15

[C.](#) 14

[D.](#) 18

[Answer & Explanation](#)

Answer: Option B

Explanation:

Prime numbers less than 50 are:

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47

Their number is 15

61. When a number is divided by 13, the remainder is 11. When the same number is divided by 17, then remainder is 9. What is the number ?

[A.](#) 339

[B.](#) 349

[C.](#) 369

[D.](#) Data inadequate

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$x = 13p + 11 \text{ and } x = 17q + 9$$

$$\therefore 13p + 11 = 17q + 9$$

$$\Rightarrow 17q - 13p = 2$$

$$\Rightarrow q = \frac{2 + 13p}{17}$$

The least value of p for which $q = \frac{2 + 13p}{17}$ is a whole number is $p = 26$

$$\therefore x = (13 \times 26 + 11)$$

$$= (338 + 11)$$

$$= 349$$

62. $(51 + 52 + 53 + \dots + 100) = ?$

[A. 2525](#)

[B. 2975](#)

[C. 3225](#)

[D. 3775](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$S_n = (1 + 2 + 3 + \dots + 50 + 51 + 52 + \dots + 100) - (1 + 2 + 3 + \dots + 50)$$

$$= \frac{100}{2} \times (1 + 100) - \frac{50}{2} \times (1 + 50)$$

$$= (50 \times 101) - (25 \times 51)$$

$$= (5050 - 1275)$$

$$= 3775.$$

63. $(800 \div 64) \times (1296 \div 36) = ?$

[A. 420](#)

[B. 460](#)

[C. 500](#)

[D. 540](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option E

Explanation:

$$\text{Given Exp.} = \frac{800}{64} \times \frac{1296}{36} = 450$$

64. Which natural number is nearest to 8485, which is completely divisible by 75 ?

[A. 8475](#)

[B. 8500](#)

[C. 8550](#)

[D. 8525](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

On dividing, we get

$$\begin{array}{r} 75 \overline{) 8485} \quad (113 \\ \underline{75} \\ 98 \\ \underline{75} \\ 235 \\ \underline{225} \\ 10 \\ \underline{} \end{array}$$

$$\begin{aligned} \text{Required number} &= (8485 - 10) \\ &= 8475. \end{aligned}$$

65. If the number 42573 * is exactly divisible by 72, then the minimum value of * is:

[A.4](#)

[B.5](#)

[C.6](#)

[D.7](#)

[E.8](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

$72 = 9 \times 8$, where 9 and 8 are co-prime.

The minimum value of x for which 73x for which 73x is divisible by 8 is, $x = 6$.

Sum of digits in 425736 = $(4 + 2 + 5 + 7 + 3 + 6) = 27$, which is divisible by 9.

$\therefore$ Required value of * is 6.

66. Which of the following numbers is divisible by each one of 3, 7, 9 and 11 ?

[A.639](#)

[B.2079](#)

[C.3791](#)

[D.37911](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

639 is not divisible by 7

2079 is divisible by each of 3, 7, 9, 11.

67. Which natural number is nearest to 9217, which is completely divisible by 88 ?

[A.](#)9152

[B.](#)9240

[C.](#)9064

[D.](#)9184

[E.](#)None of these

[Answer & Explanation](#)

Answer: Option B

Explanation:

On dividing we get,

$$\begin{array}{r} 88 \overline{) 9217} \quad (104 \\ \underline{88} \\ 417 \\ \underline{352} \\ 65 \\ \underline{} \end{array}$$

$$\begin{aligned} \text{Therefore, Required number} &= 9217 + (88 - 65) \\ &= 9217 + 23 \\ &= 9240. \end{aligned}$$

68. $(4300731) - ? = 2535618$

[A.](#)1865113

[B.](#)1775123

[C.](#)1765113

[D.](#)1675123

[E.](#)None of these

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$\text{Let } 4300731 - x = 2535618$$

$$\text{Then } x, = 4300731 - 2535618 = 1765113$$

69. n is a whole number which when divided by 4 gives 3 as remainder. What will be the remainder when $2n$ is divided by 4 ?

[A.](#)3

[B.](#)2

[C.](#)1

[D.](#)0

[Answer & Explanation](#)

Answer: Option B

Explanation:

Let $n = 4q + 3$. Then $2n = 8q + 6 = 4(2q + 1) + 2$.

Thus, when $2n$ is divided by 4, the remainder is 2.

70. $(489 + 375)^2 - (489 - 375)^2 = ?$
(489 x 375)

[A.](#) 144

[B.](#) 864

[C.](#) 2

[D.](#) 4

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\text{Given Exp.} = \frac{(a+b)^2}{ab} - \frac{(a-b)^2}{ab} = \frac{4a}{b} = 4$$

71. $397 \times 397 + 104 \times 104 + 2 \times 397 \times 104 = ?$

[A.](#) 250001

[B.](#) 251001

[C.](#) 260101

[D.](#) 261001

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\begin{aligned}\text{Given Exp.} &= (397)^2 + (104)^2 + 2 \times 397 \times 104 \\ &= (397 + 104)^2 \\ &= (501)^2 = (500 + 1)^2 \\ &= (500^2) + (1)^2 + (2 \times 500 \times 1) \\ &= 250000 + 1 + 1000 \\ &= 251001\end{aligned}$$

72. $(35423 + 7164 + 41720) - (317 \times 89) = ?$

[A.](#) 28213

[B.](#) 84307

[C.](#) 50694

[D.](#) 56094

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\begin{array}{r} 35423 \\ + 7164 \\ + 41720 \\ \hline 84307 \\ - 28213 \\ \hline 56094 \\ \hline \end{array}$$
$$\begin{aligned} 317 \times 89 &= 317 \times (90 - 1) \\ &= (317 \times 90 - 317) \\ &= (28530 - 317) \\ &= 28213 \end{aligned}$$

73. $(x^n - a^n)$ is completely divisible by $(x - a)$, when

[A.](#) n is any natural number

[B.](#) n is an even natural number

[C.](#) n is an odd natural number

[D.](#) n is prime

[Answer & Explanation](#)

Answer: Option A

Explanation:

For every natural number n , $(x^n - a^n)$ is completely divisible by $(x - a)$.

74. Which one of the following numbers is completely divisible by 45?

[A.](#) 181560

[B.](#) 331145

[C.](#) 202860

[D.](#) 2033555

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option C

Explanation:

45 = 5 x 9, where 5 and 9 are co-primes.

Unit digit must be 0 or 5 and sum of digits must be divisible by 9.

Among given numbers, such number is 202860.

75. Which of the following numbers will completely divide $(3^{25} + 3^{26} + 3^{27} + 3^{28})$?

[A.](#) 11

[B.](#) 16

[C.](#) 25

[D.](#) 30

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$(3^{25} + 3^{26} + 3^{27} + 3^{28}) = 3^{25} \times (1 + 3 + 3^2 + 3^3) = 3^{25} \times 40$$

$$= 3^{24} \times 3 \times 4 \times 10$$

$$= (3^{24} \times 4 \times 30), \text{ which is divisible by } 30.$$

-
76. A number when divided by 6 leaves a remainder 3. When the square of the number is divided by 6, the remainder is:

[A.0](#)

[B.1](#)

[C.2](#)

[D.3](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\text{Let } x = 6q + 3.$$

$$\text{Then, } x^2 = (6q + 3)^2$$

$$= 36q^2 + 36q + 9$$

$$= 6(6q^2 + 6q + 1) + 3$$

Thus, when x^2 is divided by 6, then remainder = 3.

-
77. The sum of the two numbers is 12 and their product is 35. What is the sum of the reciprocals of these numbers ?

[A. \$\frac{12}{35}\$](#)

[B. \$\frac{1}{35}\$](#)

[C. \$\frac{35}{8}\$](#)

[D. \$\frac{7}{32}\$](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

Let the numbers be a and b . Then, $a + b = 12$ and $ab = 35$.

$$\therefore \frac{a}{ab} + \frac{b}{ab} = \frac{12}{35} \Rightarrow \left(\frac{1}{b} + \frac{1}{a} \right) = \frac{12}{35}$$

$$\therefore \text{Sum of reciprocals of given numbers} = \frac{12}{35}$$

-
78. What will be remainder when 17^{200} is divided by 18 ?

[A.17](#)

[B.16](#)

[C.1](#)

[D.2](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

When n is even, $(x^n - a^n)$ is completely divisible by $(x + a)$

$(17^{200} - 1^{200})$ is completely divisible by $(17 + 1)$, i.e., 18.

$\Rightarrow (17^{200} - 1)$ is completely divisible by 18.

$\Rightarrow$ On dividing 17^{200} by 18, we get 1 as remainder.

79. If $1400 \times x = 1050$. Then, $x = ?$

[A.](#) $\frac{1}{4}$

[B.](#) $\frac{3}{5}$

[C.](#) $\frac{2}{3}$

[D.](#) $\frac{3}{4}$

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$1400 \times x = 1050 \Rightarrow x = \frac{1050}{1400} = \frac{3}{4}$$

80. $(1^2 + 2^2 + 3^2 + \dots + 10^2) = ?$

[A.](#) 330

[B.](#) 345

[C.](#) 365

[D.](#) 385

[Answer & Explanation](#)

Answer: Option D

Explanation:

We know that $(1^2 + 2^2 + 3^2 + \dots + n^2) = \frac{1}{6}n(n+1)(2n+1)$

Putting $n = 10$, required sum $= \left(\frac{1}{6} \times 10 \times 11 \times 21 \right) = 385$

81. The difference of the squares of two consecutive even integers is divisible by which of the following integers ?

[A.](#) 3

[B.](#) 4

[C.](#) 6

[D.](#) 7

[Answer & Explanation](#)

Answer: Option B

Explanation:

Let the two consecutive even integers be $2n$ and $(2n + 2)$. Then,

$$\begin{aligned}(2n + 2)^2 &= (2n + 2 + 2n)(2n + 2 - 2n) \\ &= 2(4n + 2) \\ &= 4(2n + 1), \text{ which is divisible by 4.}\end{aligned}$$

82. Which one of the following is a prime number ?

[A. 119](#)

[B. 187](#)

[C. 247](#)

[D. 551](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option E

Explanation:

$$551 > 22$$

All prime numbers less than 24 are : 2, 3, 5, 7, 11, 13, 17, 19, 23.

119 is divisible by 7; 187 is divisible by 11; 247 is divisible by 13 and 551 is divisible by 19.

So, none of the given numbers is prime.

83. The sum all even natural numbers between 1 and 31 is:

[A. 16](#)

[B. 128](#)

[C. 240](#)

[D. 512](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$\text{Required sum} = (2 + 4 + 6 + \dots + 30)$$

This is an A.P. in which $a = 2$, $d = (4 - 2) = 2$ and $l = 30$.

Let the number of terms be n . Then,

$$t_n = 30 \Rightarrow a + (n - 1)d = 30$$

$$\Rightarrow 2 + (n - 1) \times 2 = 30$$

$$\Rightarrow n - 1 = 14$$

$$\Rightarrow n = 15$$

$$\therefore S_n = \frac{n}{2}(a + l) = \frac{15}{2} \times (2 + 30) = 240.$$

84. The difference between the place value and the face value of 6 in the numeral 856973 is

[A. 973](#)

[B. 6973](#)

[C. 5994](#)

[D. None of these](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

(Place value of 6) - (Face value of 6) = (6000 - 6) = 5994

85. If a and b are odd numbers, then which of the following is even ?

[A. \$a + b\$](#)

[B. \$a + b + 1\$](#)

[C. \$ab\$](#)

[D. \$ab + 2\$](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

The sum of two odd number is even. So, $a + b$ is even.

86. Which one of the following numbers is completely divisible by 99?

[A. 3572404](#)

[B. 135792](#)

[C. 913464](#)

[D. 114345](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$99 = 11 \times 9$, where 11 and 9 are co-prime.

By hit and trial, we find that 114345 is divisible by 11 as well as 9. So, it is divisible by

99.

87. The sum of how many terms of the series $6 + 12 + 18 + 24 + \dots$ is 1800 ?

[A.16](#)

[B.24](#)

[C.20](#)

[D.18](#)

[E.22](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

This is an A.P. in which $a = 6$, $d = 6$ and $S_n = 1800$

$$\text{Then, } \frac{n}{2}[2a + (n - 1)d] = 1800$$

$$\Rightarrow \frac{n}{2}[2 \times 6 + (n - 1) \times 6] = 1800$$

$$\Rightarrow 3n(n + 1) = 1800$$

$$\Rightarrow n(n + 1) = 600$$

$$\Rightarrow n^2 + n - 600 = 0$$

$$\Rightarrow n^2 + 25n - 24n - 600 = 0$$

$$\Rightarrow n(n + 25) - 24(n + 25) = 0$$

$$\Rightarrow (n + 25)(n - 24) = 0$$

$$\Rightarrow n = 24$$

Number of terms = 24.

88. $(51 + 52 + 53 + \dots + 100) = ?$

[A.2525](#)

[B.2975](#)

[C.3225](#)

[D.3775](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

This is an A.P. in which $a = 51$, $l = 100$ and $n = 50$.

$$\therefore \text{Sum} = n(a + l) = 50 \times (51 + 100) = (25 \times 151) = 3775.$$

89. $1904 \times 1904 = ?$

[A.](#) 3654316

[B.](#) 3632646

[C.](#) 3625216

[D.](#) 3623436

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$\begin{aligned} 1904 \times 1904 &= (1904)^2 \\ &= (1900 + 4)^2 \\ &= (1900)^2 + (4)^2 + (2 \times 1900 \times 4) \\ &= 3610000 + 16 + 15200. \\ &= 3625216. \end{aligned}$$

90. What is the unit digit in $(7^{95} - 3^{58})$?

[A.](#) 0

[B.](#) 4

[C.](#) 6

[D.](#) 7

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\begin{aligned} \text{Unit digit in } 7^{95} &= \text{Unit digit in } [(7^4)^{23} \times 7^3] \\ &= \text{Unit digit in } [(\text{Unit digit in } (2401))^{23} \times (343)] \\ &= \text{Unit digit in } (1^{23} \times 343) \\ &= \text{Unit digit in } (343) \\ &= 3 \end{aligned}$$

$$\begin{aligned} \text{Unit digit in } 3^{58} &= \text{Unit digit in } [(3^4)^{14} \times 3^2] \\ &= \text{Unit digit in } [(\text{Unit digit in } (81))^{14} \times 3^2] \\ &= \text{Unit digit in } [(1)^{14} \times 3^2] \\ &= \text{Unit digit in } (1 \times 9) \\ &= \text{Unit digit in } (9) \\ &= 9 \end{aligned}$$

$$\text{Unit digit in } (7^{95} - 3^{58}) = \text{Unit digit in } (343 - 9) = \text{Unit digit in } (334) = 4.$$

So, Option B is the answer.

91. Which one of the following is a prime number ?

[A.](#) 161

[B.](#) 221

[C.](#) 373

[D.](#) 437

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$437 > 22$$

All prime numbers less than 22 are : 2, 3, 5, 7, 11, 13, 17, 19.

161 is divisible by 7, and 221 is divisible by 13.

373 is not divisible by any of the above prime numbers.

$\therefore$ 373 is prime.

92. The smallest 6 digit number exactly divisible by 111 is:

[A.](#) 111111

[B.](#) 110011

[C.](#) 100011

[D.](#) 110101

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option C

Explanation:

The smallest 6-digit number 100000.

$$\begin{array}{r} 111 \overline{) 100000} \quad (900 \\ \underline{999} \\ 100 \\ \underline{99} \\ 10000 \end{array}$$

$$\begin{aligned} \text{Required number} &= 100000 + (111 - 100) \\ &= 100011. \end{aligned}$$

93. The largest 5 digit number exactly divisible by 91 is:

[A.](#) 99921

[B.](#) 99918

[C.](#) 99981

[D.](#) 99971

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option B

Explanation:

Largest 5-digit number = 99999

$$\begin{array}{r} 91 \overline{) 99999} \quad (1098 \\ \underline{91} \\ 899 \end{array}$$

```
819
----
809
728
---
81
---
```

$$\begin{aligned}\text{Required number} &= (99999 - 81) \\ &= 99918.\end{aligned}$$

94. $768 \times 768 \times 768 + 232 \times 232 \times 232 = ?$
 $768 \times 768 - 768 \times 232 + 232 \times 232 = ?$

[A.](#)1000

[B.](#)536

[C.](#)500

[D.](#)268

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\text{Given Exp.} = \frac{(a^3 + b^3)}{(a^2 - ab + b^2)} = (a + b) = (768 + 232) = 1000$$

95. The smallest 5 digit number exactly divisible by 41 is:

[A.](#)1004

[B.](#)10004

[C.](#)10045

[D.](#)10025

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option B

Explanation:

The smallest 5-digit number = 10000.

```
41) 10000 (243
    82
    ---
    180
    164
    ----
    160
    123
    ---
    37
    ---
```

$$\begin{aligned}\text{Required number} &= 10000 + (41 - 37) \\ &= 10004.\end{aligned}$$

96. How many terms are there in the G.P. 3, 6, 12, 24, ... , 384 ?

[A.](#)8

[B.](#)9

[C.10](#)

[D.11](#)

[E.7](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

Here $a = 3$ and $r = \frac{6}{3} = 2$. Let the number of terms be n .

$$\text{Then, } t_n = 384 \Rightarrow ar^{n-1} = 384$$

$$\Rightarrow 3 \times 2^{n-1} = 384$$

$$\Rightarrow 2^{n-1} = 128 = 2^7$$

$$\Rightarrow n - 1 = 7$$

$$\Rightarrow n = 8$$

$\therefore$ Number of terms = 8.

97. If x and y are positive integers such that $(3x + 7y)$ is a multiple of 11, then which of the following will be divisible by 11 ?

[A. \$4x + 6y\$](#)

[B. \$x + y + 4\$](#)

[C. \$9x + 4y\$](#)

[D. \$4x - 9y\$](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

By hit and trial, we put $x = 5$ and $y = 1$ so that $(3x + 7y) = (3 \times 5 + 7 \times 1) = 22$, which is divisible by 11.

$\therefore (4x + 6y) = (4 \times 5 + 6 \times 1) = 26$, which is not divisible by 11;

$(x + y + 4) = (5 + 1 + 4) = 10$, which is not divisible by 11;

$(9x + 4y) = (9 \times 5 + 4 \times 1) = 49$, which is not divisible by 11;

$(4x - 9y) = (4 \times 5 - 9 \times 1) = 11$, which is divisible by 11.

98. $9548 + 7314 = 8362 + (?)$

[A. 8230](#)

[B. 8410](#)

[C. 8500](#)

[D. 8600](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$\begin{array}{r} 9548 \\ + 7314 \\ \hline 16862 \\ \hline \end{array} \qquad \begin{array}{r} 16862 = 8362 + x \\ x = 16862 - 8362 \\ = 8500 \end{array}$$

99. In a division sum, the remainder is 0. As student mistook the divisor by 12 instead of 21 and obtained 35 as quotient. What is the correct quotient ?

[A.0](#)

[B.12](#)

[C.13](#)

[D.20](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\text{Number} = (12 \times 35)$$

$$\text{Correct Quotient} = 420 \div 21 = 20$$

100. $2 + 2^2 + 2^3 + \dots + 2^9 = ?$

[A.2044](#)

[B.1022](#)

[C.1056](#)

[D.None of these](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

This is a G.P. in which $a = 2$, $r = \frac{2^2}{2} = 2$ and $n = 9$.

$$\therefore S_n = a(r^n - 1) = 2 \times (2^9 - 1) = 2 \times (512 - 1) = 2 \times 511 = 1022.$$

101. The sum of even numbers between 1 and 31 is:

[A.6](#)

[B.28](#)

[C.240](#)

[D.512](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

Let $S_n = (2 + 4 + 6 + \dots + 30)$. This is an A.P. in which $a = 2$, $d = 2$ and $l = 30$

Let the number of terms be n . Then,

$$a + (n - 1)d = 30$$

$$\Rightarrow 2 + (n - 1) \times 2 = 30$$

$$\Rightarrow n = 15.$$

$$\therefore S_n = \frac{n}{2}(a + l) = \frac{15}{2} \times (2 + 30) = (15 \times 16) = 240.$$

102. If the number $91876 * 2$ is completely divisible by 8, then the smallest whole number in place of $*$ will be:

[A.1](#)

[B.2](#)

[C.3](#)

[D.4](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

Then number $6x2$ must be divisible by 8.

$\therefore x = 3$, as 632 is divisible 8.

103. $2056 \times 987 = ?$

[A.1936372](#)

[B.2029272](#)

[C.1896172](#)

[D.1926172](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\begin{aligned} 2056 \times 987 &= 2056 \times (1000 - 13) \\ &= 2056 \times 1000 - 2056 \times 13 \\ &= 2056000 - 26728 \\ &= 2029272. \end{aligned}$$

104. On multiplying a number by 7, the product is a number each of whose digits is 3. The smallest such number is:

[A.47619](#)

[B.47719](#)

[C.48619](#)

[D.47649](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

By hit and trial, we find that

$$47619 \times 7 = 333333.$$

105. If 60% of $\frac{3}{5}$ of a number is 36, then the number is:

[A. 80](#)

[B. 100](#)

[C. 75](#)

[D. 90](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

Let the number be x . Then

$$\begin{aligned} 60\% \text{ of } \frac{3}{5} \text{ of } x &= 36 \\ \Rightarrow \frac{60}{100} \times \frac{3}{5} \times x &= 36 \\ \Rightarrow x \left(\frac{36}{5} \times \frac{25}{9} \right) &= 100 \end{aligned}$$

$\therefore$ Required number = 100

106. If x and y are the two digits of the number 653xy such that this number is divisible by 80, then $x + y = ?$

[A. 2 or 6](#)

[B. 4](#)

[C. 4 or 8](#)

[D. 8](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$80 = 2 \times 5 \times 8$$

Since 653xy is divisible by 2 and 5 both, so $y = 0$.

Now, 653x0 is divisible by 8, so 3x0 should be divisible by 8.

This happens when $x = 2$ or 6 .

$$\therefore x + y = (2 + 0) = 2 \quad [\text{or}] \quad x + y = (6 + 0) = 6.$$

107. The difference of the squares of two consecutive odd integers is divisible by which of the following integers ?

[A.3](#)

[B.6](#)

[C.7](#)

[D.8](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

Let the two consecutive odd integers be $(2n + 1)$ and $(2n + 3)$. Then,

$$(2n + 3)^2 - (2n + 1)^2 = (2n + 3 + 2n + 1)(2n + 3 - 2n - 1)$$

$$= (4n + 4) \times 2$$

$$= 8(n + 1), \text{ which is divisible by } 8.$$

108. What is the unit digit in $(4137)^{754}$?

[A.1](#)

[B.3](#)

[C.7](#)

[D.9](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\text{Unit digit in } (4137)^{754} = \text{Unit digit in } \{[(4137)^4]^{188} \times (4137)^2\}$$

$$= \text{Unit digit in } \{292915317923361 \times 17114769\}$$

$$= (1 \times 9) = 9$$

109. $587 \times 999 = ?$

[A.586413](#)

[B.587523](#)

[C.614823](#)

[D.615173](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\begin{aligned}587 \times 999 &= 587 \times (1000 - 1) \\&= 587 \times 1000 - 587 \times 1 \\&= 587000 - 587 \\&= 586413.\end{aligned}$$

110. A number was divided successively in order by 4, 5 and 6. The remainders were respectively 2, 3 and 4. The number is:

[A.214](#)

[B.476](#)

[C.954](#)

[D.1908](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\begin{array}{rcl}4 & | & x \\ \hline 5 & | & y - 2 \\ \hline 6 & | & z - 3 \\ \hline & | & 1 - 4\end{array} \quad \begin{aligned}z &= 6 \times 1 + 4 = 10 \\y &= 5 \times z + 3 = 5 \times 10 + 3 = 53 \\x &= 4 \times y + 2 = 4 \times 53 + 2 = 214\end{aligned}$$

Hence, required number = 214.

111. If $(64)^2 - (36)^2 = 20 \times x$, then $x = ?$

[A.70](#)

[B.120](#)

[C.180](#)

[D.140](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$20 \times x = (64 + 36)(64 - 36) = 100 \times 28$$

$$\Rightarrow \frac{x \times 100 \times 28}{100} = 140$$

112. Which one of the following can't be the square of natural number ?

[A.32761](#)

[B.81225](#)

[C.42437](#)

[D.20164](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

The square of a natural number never ends in 7.

∴ 42437 is not the square of a natural number.

113. $(2^2 + 4^2 + 6^2 + \dots + 20^2) = ?$

[A.770](#)

[C.1540](#)

[Answer & Explanation](#)

[B.1155](#)

[D.385 x 385](#)

Answer: Option C

Explanation:

$$(2^2 + 4^2 + 6^2 + \dots + 20^2) = (1 \times 2)^2 + (2 \times 2)^2 + (2 \times 3)^2 + \dots + (2 \times 10)^2$$

$$= (2^2 \times 1^2) + (2^2 \times 2^2) + (2^2 \times 3^2) + \dots + (2^2 \times 10^2)$$

$$= 2^2 \times [1^2 + 2^2 + 3^2 + \dots + 10^2]$$

$$\left[\text{Ref: } (1^2 + 2^2 + 3^2 + \dots + n^2) = \frac{1}{6}n(n+1)(2n+1) \right]$$

$$= \left(4 \times \frac{1}{6} \times 10 \times 11 \times 21 \right)$$

$$= (4 \times 5 \times 77)$$

$$= 1540.$$

114. $854 \times 854 \times 854 - 276 \times 276 \times 276 = ?$
 $854 \times 854 + 854 \times 276 + 276 \times 276$

[A.1130](#)

[C.565](#)

[E. None of these](#)

[Answer & Explanation](#)

[B.578](#)

[D.1156](#)

Answer: Option B

Explanation:

$$\text{Given Exp.} = \frac{(a^3 - b^3)}{(a^2 + ab + b^2)} = (a - b) = (854 - 276) = 578$$

115. $35 + 15 \times 1.5 = ?$

[A.85](#)

[C.57.5](#)

[E. None of these](#)

[B.51.5](#)

[D.5.25](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$\text{Given Exp.} = 35 + 15 \times \frac{3}{2} = 35 + \frac{45}{2} = 35 + 22.5 = 57.5$$

116. The sum of first 45 natural numbers is:

[A.](#)1035

[B.](#)1280

[C.](#)2070

[D.](#)2140

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\text{Let } S_n = (1 + 2 + 3 + \dots + 45)$$

This is an A.P. in which $a = 1$, $d = 1$, $n = 45$ and $l = 45$

$$\therefore S_n = \frac{n}{2}(a + l) = \frac{45}{2} \times (1 + 45) = (45 \times 23) = 1035$$

Required sum = 1035.

117. $666 \div 6 \div 3 = ?$

[A.](#)37

[B.](#)333

[C.](#)111

[D.](#)84

[E.](#)None of these

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\text{Given Exp.} = 666 \times \frac{1}{6} \times \frac{1}{3} = 37$$

118. The sum of all two digit numbers divisible by 5 is:

[A.](#)1035

[B.](#)1245

[C.](#)1230

[D.](#)945

[E.](#)None of these

[Answer & Explanation](#)

Answer: Option D

Explanation:

Required numbers are 10, 15, 20, 25, ..., 95

This is an A.P. in which $a = 10$, $d = 5$ and $l = 95$.

$$t_n = 95 \Rightarrow a + (n - 1)d = 95$$

$$\Rightarrow 10 + (n - 1) \times 5 = 95$$

$$\Rightarrow (n - 1) \times 5 = 85$$

$$\Rightarrow (n - 1) = 17$$

$$\Rightarrow n = 18$$

$$\therefore \text{Required Sum} = \frac{n}{2}(a + l) = \frac{18}{2} \times (10 + 95) = (9 \times 105) = 945.$$

119. The difference between the place values of two sevens in the numeral 69758472 is

[A.](#)0

[B.](#)6993

[C.](#)699930

[D.](#)None of these

[Answer & Explanation](#)

Answer: Option C

Explanation:

Required difference = $(700000 - 70) = 699930$

120. On dividing a number by 68, we get 269 as quotient and 0 as remainder. On dividing the same number by 67, what will the remainder ?

[A.](#)0

[B.](#)1

[C.](#)2

[D.](#)3

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\text{Number} = 269 \times 68 + 0 = 18292$$

$$\begin{array}{r} 67 \overline{) 18292} \quad (273 \\ \underline{134} \\ 489 \\ \underline{469} \\ 202 \end{array}$$

$$\begin{array}{r} 201 \\ --- \\ 1 \\ --- \end{array}$$

Therefore, Required remainder = 1

121. What is the unit digit in the product $(3^{65} \times 6^{59} \times 7^{71})$?

[A.1](#)

[B.2](#)

[C.4](#)

[D.6](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

Unit digit in $3^4 = 1 \Rightarrow$ Unit digit in $(3^4)^{16} = 1$

$\therefore$ Unit digit in $3^{65} =$ Unit digit in $[(3^4)^{16} \times 3] = (1 \times 3) = 3$

Unit digit in $6^{59} = 6$

Unit digit in $7^4 \Rightarrow$ Unit digit in $(7^4)^{17}$ is 1.

Unit digit in $7^{71} =$ Unit digit in $[(7^4)^{17} \times 7^3] = (1 \times 3) = 3$

$\therefore$ Required digit = Unit digit in $(3 \times 6 \times 3) = 4$.

122. $3251 + 587 + 369 - ? = 3007$

[A.1250](#)

[B.1300](#)

[C.1375](#)

[D.1200](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\begin{array}{r} 3251 \\ + 587 \\ + 369 \\ ---- \\ 4207 \\ ---- \end{array}$$

Let $4207 - x = 3007$

Then, $x = 4207 - 3007 = 1200$

123. $7589 - ? = 3434$

[A.4242](#)

[B.4155](#)

[C.1123](#)

[D.11023](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

Let $7589 - x = 3434$

Then, $x = 7589 - 3434 = 4155$

124. $217 \times 217 + 183 \times 183 = ?$

[A.](#) 79698

[B.](#) 80578

[C.](#) 80698

[D.](#) 81268

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\begin{aligned}(217)^2 + (183)^2 &= (200 + 17)^2 + (200 - 17)^2 \\ &= 2 \times [(200)^2 + (17)^2] \quad [\text{Ref: } (a + b)^2 + (a - b)^2 = 2(a^2 + b^2)] \\ &= 2[40000 + 289] \\ &= 2 \times 40289 \\ &= 80578.\end{aligned}$$

125. The unit digit in the product $(784 \times 618 \times 917 \times 463)$ is:

[A.](#) 2

[B.](#) 3

[C.](#) 4

[D.](#) 5

[Answer & Explanation](#)

Answer: Option A

Explanation:

Unit digit in the given product = Unit digit in $(4 \times 8 \times 7 \times 3) = (672) = 2$

126. If the number $653xy$ is divisible by 90, then $(x + y) = ?$

[A.](#) 2

[B.](#) 3

[C.](#) 4

[D.](#) 6

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$90 = 10 \times 9$$

Clearly, $653xy$ is divisible by 10, so $y = 0$

Now, $653x0$ is divisible by 9.

So, $(6 + 5 + 3 + x + 0) = (14 + x)$ is divisible by 9. So, $x = 4$.

Hence, $(x + y) = (4 + 0) = 4$.

127. $3897 \times 999 = ?$

[A.](#) 3883203

[B.](#) 3893103

[C.](#) 3639403

[D.](#) 3791203

[E.](#) None of these

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\begin{aligned} 3897 \times 999 &= 3897 \times (1000 - 1) \\ &= 3897 \times 1000 - 3897 \times 1 \\ &= 3897000 - 3897 \\ &= 3893103. \end{aligned}$$

128. What is the unit digit in 7^{105} ?

[A.](#) 1

[B.](#) 5

[C.](#) 7

[D.](#) 9

[Answer & Explanation](#)

Answer: Option C

Explanation:

Unit digit in $7^{105} = \text{Unit digit in } [(7^4)^{26} \times 7]$

But, unit digit in $(7^4)^{26} = 1$

$\therefore$ Unit digit in $7^{105} = (1 \times 7) = 7$

129. Which of the following numbers will completely divide $(4^{61} + 4^{62} + 4^{63} + 4^{64})$?

[A.](#) 3

[B.](#) 10

[C.](#) 11

[D.](#) 13

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$(4^{61} + 4^{62} + 4^{63} + 4^{64}) = 4^{61} \times (1 + 4 + 4^2 + 4^3) = 4^{61} \times 85$$

$$= 4^{60} \times (4 \times 85)$$

$$= (4^{60} \times 340), \text{ which is divisible by } 10.$$

130. $106 \times 106 - 94 \times 94 = ?$

[A.2400](#)

[B.2000](#)

[C.1904](#)

[D.1906](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option A

Explanation:

$$\begin{aligned} 106 \times 106 - 94 \times 94 &= (106)^2 - (94)^2 \\ &= (106 + 94)(106 - 94) \quad [\text{Ref: } (a^2 - b^2) = (a + b)(a - b)] \\ &= (200 \times 12) \\ &= 2400. \end{aligned}$$

131. A number when divided successively by 4 and 5 leaves remainders 1 and 4 respectively.

When it is successively divided by 5 and 4, then the respective remainders will be

[A.1, 2](#)

[B.2, 3](#)

[C.3, 2](#)

[D.4, 1](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\begin{array}{r|l} 4 & x \\ \hline 5 & y - 1 \\ \hline & 1 - 4 \end{array} \quad \begin{aligned} y &= (5 \times 1 + 4) = 9 \\ x &= (4 \times y + 1) = (4 \times 9 + 1) = 37 \end{aligned}$$

Now, 37 when divided successively by 5 and 4, we get

$$\begin{array}{r|l} 5 & 37 \\ \hline 4 & 7 - 2 \\ \hline & 1 - 3 \end{array}$$

Respective remainders are 2 and 3.

132. $8796 \times 223 + 8796 \times 77 = ?$

[A.2736900](#)

[B.2638800](#)

[C.2658560](#)

[D.2716740](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\begin{aligned}8796 \times 223 + 8796 \times 77 &= 8796 \times (223 + 77) \quad [\text{Ref: By Distributive Law}] \\&= (8796 \times 300) \\&= 2638800\end{aligned}$$

133. $8988 \div 8 \div 4 = ?$

[A.4494](#)

[B.561.75](#)

[C.2247](#)

[D.280.875](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\text{Given Exp.} = 8988 \times \frac{1}{8} \times \frac{1}{4} = \frac{2247}{8} = 280.875$$

134. $287 \times 287 + 269 \times 269 - 2 \times 287 \times 269 = ?$

[A.534](#)

[B.446](#)

[C.354](#)

[D.324](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

$$\begin{aligned}\text{Given Exp.} &= a^2 + b^2 - 2ab, \text{ where } a = 287 \text{ and } b = 269 \\&= (a - b)^2 = (287 - 269)^2 \\&= (18^2) \\&= 324\end{aligned}$$

135. $3 + 33 + 333 + 3.33 = ?$

[A.362.3](#)

[B.372.33](#)

[C.702.33](#)

[D.702](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\begin{array}{r}3 \\+ 33 \\+ 333\end{array}$$

$$\begin{array}{r} + \quad 3.33 \\ \hline 372.33 \\ \hline \end{array}$$

136. Which one of the following can't be the square of natural number ?

[A.30976](#)

[B.75625](#)

[C.28561](#)

[D.143642](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option D

Explanation:

The square of a natural number never ends in 2.

∴ 143642 is not the square of natural number.

137. $(1000)^9 \div 10^{24} = ?$

[A.10000](#)

[B.1000](#)

[C.100](#)

[D.10](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option B

Explanation:

$$\text{Given Exp.} = \frac{(1000)^9}{10^{24}} = \frac{(10^3)^9}{10^{24}} = \frac{(10)^{27}}{10^{24}} = 10^{(27-24)} = 10^3 = 1000$$

138. $\{(476 + 424)^2 - 4 \times 476 \times 424\} = ?$

[A.2906](#)

[B.3116](#)

[C.2704](#)

[D.2904](#)

[E. None of these](#)

[Answer & Explanation](#)

Answer: Option C

Explanation:

$$\begin{aligned} \text{Given Exp.} &= [(a + b)^2 - 4ab], \text{ where } a = 476 \text{ and } b = 424 \\ &= [(476 + 424)^2 - 4 \times 476 \times 424] \\ &= [(900)^2 - 807296] \\ &= 810000 - 807296 \\ &= 2704. \end{aligned}$$