

1- $186 \times 186 + 159 \times 159 - 2 \times 186 \times 159 = ?$

- A.329
- B.700
- C.729
- D.848
- E.None of these

Answer & Explanation

Answer - C (729)

Explanation - Given Exp.

$a^2 + b^2 - 2ab$, where $a = 186$ and $b = 159$

$$= (a - b)^2 = (186 - 159)^2 = (27)^2$$

$$= (20 + 7)^2 = (20)^2 + 7 + 2 \times 20 \times 7 = 400 + 49 + 280 = 729$$

2- The number of prime factors of $(3 \times 5)^{12} (2 \times 7)^{10} (10)^{25}$ is:

- A.69
- B.84
- C.93
- D.94
- E.None of these

Answer & Explanation

Answer - D (94)

Explanation - $(3 \times 5)^{12} \times (2 \times 7)^{10} \times (10)^{25} = (3 \times 5)^{12} \times (2 \times 7)^{10} \times (2 \times 5)^{25}$

$$= 3^{12} \times 5^{12} \times 2^{10} \times 7^{10} \times 2^{25} \times 5^{25}$$

$$= 2^{35} \times 3^{12} \times 5^{37} \times 7^{10}$$

Total number of prime factors = $(35 + 12 + 37 + 10) = 94$

3- If $(64)^2 - (36)^2 = 20z$, the value of z is:

- A.140
- B.142
- C.684
- D.670

- **E.**None of these

Answer & Explanation

Answer - **A** (140)

Explanation - $20z = (64)^2 - (36)^2$

$$20z = (64 + 36) (64 - 36)$$

$$20z = 100 \times 28$$

$$z = (100 \times 28) / 20$$

$$= 140$$

4- Which of the following numbers is divisible by 3, 7, 9 and 11?

- **A.**639
- **B.**2079
- **C.**3791
- **D.**37911
- **E.**None of these

Answer & Explanation

Answer - **B** (2079)

Explanation - (a) 639 is not divisible by 7

(b) 2079 is divisible by 3, 7, 9 and 11

(c) 3791 is not divisible by 3

(d) 37911 is not divisible by 9

5- $39798 + 3798 + 378 = ?$

- **A.**43576
- **B.**43974
- **C.**43984
- **D.**49532
- **E.**None of these

Answer & Explanation

Answer - **B** (43974)

Explanation - $39798 + 3798 + 378 = 43974$

6- A six-digit number is formed by repeating a three-digit number; for example, 256256 or 678678 etc. Any number of this form is always exactly divisible by:

- **A.** 7 only
- **B.** 13 only
- **C.** 11 only
- **D.** 1001
- **E.** None of these

Answer & Explanation

Answer - **D** (1001)

Explanation - $256256 = 256 \times 1001$; $678678 = 678 \times 1001$, etc.

So, any number of this form is divisible by 1001

7- The unit's digit in the product $(3127)^{173}$ is:

- **A.** 1
- **B.** 3
- **C.** 7
- **D.** 9
- **E.** None of these

Answer & Explanation

Answer - **C** (7)

Explanation - Unit digit in $(3127)^{173}$ - Unit digit in $(7)^{173}$. Now, 7^4 gives unit digit 1

$(7)^{173} = (7^4)^{43} \times 7^1$. Thus, $(7)^{173}$ gives unit digit 7

8- The number of digits of the smallest number, which when multiplied by 7 gives the result consisting entirely of nines, is:

- **A.** 3
- **B.** 5
- **C.** 6
- **D.** 8

- **E.**None of these
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Answer & Explanation

Answer - **C** (6)

Explanation - By hit and trial, we find that a number exactly divisible by 7 and consisting entirely of nines is 999999.

Number of digits in it = 6

9- Which of the following numbers is exactly divisible by 99?

- **A.**114345
- **B.**913464
- **C.**135792
- **D.**3572404
- **E.**None of these

Answer & Explanation

Answer - **A** (114345)

Explanation - The required number should be divisible by both 9 and 11.

Clearly, 114345 is divisible by both 9 and 11. So, it is divisible by 99

10- On dividing a number by 999, the quotient is 366 and the remainder is 103. The number is:

- **A.**364724
- **B.**365387
- **C.**365737
- **D.**366757
- **E.**None of these

Answer & Explanation

Answer - **C** (365737)

Explanation - Required number = $999 \times 366 + 103 = (1000 - 1) \times 366 + 103 = 366000 - 366 + 103$

$$= 365737$$

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