

Book For
West Central Railway



WCR ALP Arithmetic Sample Paper



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(1) $1.5625 = ?$

[A] 1.05

[B] 1.25

[C] 1.45

[D] 1.55

Answer : [B]

Explanation:

$$1 \overline{) 1.5625} \begin{array}{r} 1.25 \\ \underline{12} \\ 22 \\ \underline{22} \\ 56 \\ \underline{44} \\ 1225 \\ \underline{1225} \\ 0 \end{array}$$

$\therefore 1.5625 = 1.25.$

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(2) The cube root of .000216 is:

[A] .6

[B] .06

[C] 77

[D] 87

Answer : [B]

Explanation:

$$\begin{aligned} (.000216)^{1/3} &= \left(\frac{216}{10^6} \right)^{1/3} \\ &= \left(\frac{6 \times 6 \times 6}{10^2 \times 10^2 \times 10^2} \right)^{1/3} \\ &= \frac{6}{10^2} \\ &= \frac{6}{100} \\ &= 0.06 \end{aligned}$$

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(3) The square root of $(7 + 3 \sqrt{5})(7 - 3 \sqrt{5})$ is

[A] 5

[B] 2

[C] 4

[D]

3 5

Answer : [B]

Explanation:

$$(7 + 3\sqrt{5})(7 - 3\sqrt{5}) = (7)^2 - (3\sqrt{5})^2 = 49 - 45 = 4 = 2.$$

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(4) A group of students decided to collect as many paise from each member of group as is the number of members. If the total collection amounts to Rs. 59.29, the number of the member is the group is:

[A] 57

[B] 67

[C] 77

[D] 87

Answer : [C]

Explanation:

Money collected = (59.29×100) paise = 5929 paise.

\therefore Number of members = $5929 = 77$.

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(5) The square root of 64009 is:

[A] 253

[B] 347

[C] 363

[D] 803

Answer : [A]

Explanation:

$2 \overline{)64009} \begin{array}{r} 253 \\ \underline{4} \\ 45 \\ \underline{45} \\ 240 \\ \underline{225} \\ 1509 \\ \underline{1509} \\ 0 \end{array}$

$\therefore 64009 = 253^2$.

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(6) The difference between a two-digit number and the number obtained by interchanging the digits is 36. What is the difference between the sum and the difference of the digits of the number if the ratio between the digits of the number is 1 : 2 ?

[A] 4

[B] 8

[C] 16

[D] None of these

Answer : [B]

Explanation:

Since the number is greater than the number obtained on reversing the digits, so the ten's digit is greater than the unit's digit.

Let ten's and unit's digits be $2x$ and x respectively.

Then, $(10 \times 2x + x) - (10x + 2x) = 36$

$\Rightarrow 9x = 36$

$\Rightarrow x = 4$.

\therefore Required difference = $(2x + x) - (2x - x) = 2x = 8$.

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(7) If one-third of one-fourth of a number is 15, then three-tenth of that number is:

[A] 35

[B] 36

[C] 45

[D] 54

Answer : [D]

Explanation:

Let the number be x .

Then, $\frac{1}{3}$ of $\frac{1}{4}$ of $x = 15 \Leftrightarrow x = 15 \times 12 = 180$.

So, required number = $\left(\frac{3}{10} \times 180 \right) = 54$.

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(8) The sum of the digits of a two-digit number is 15 and the difference between the digits is 3. What is the two-digit number?

- [A] 69
- [B] 78
- [C] 96
- [D] Cannot be determined
- [E] None of these

Answer : [D]

Explanation:

Let the ten's digit be x and unit's digit be y .

Then, $x + y = 15$ and $x - y = 3$ or $y - x = 3$.

Solving $x + y = 15$ and $x - y = 3$, we get: $x = 9, y = 6$.

Solving $x + y = 15$ and $y - x = 3$, we get: $x = 6, y = 9$.

So, the number is either 96 or 69.

Hence, the number cannot be determined.

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(9) A number consists of 3 digits whose sum is 10. The middle digit is equal to the sum of the other two and the number will be increased by 99 if its digits are reversed. The number is:

- [A] 145
- [B] 253
- [C] 370
- [D] 352

Answer : [B]

Explanation:

Let the middle digit be x .

Then, $2x = 10$ or $x = 5$. So, the number is either 253 or 352.

Since the number increases on reversing the digits, so the hundred's digit is smaller than the unit's digit.

Hence, required number = 253.

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(10) The sum of two number is 25 and their difference is 13. Find their product.

- [A] 104
- [B] 114
- [C] 315
- [D] 325

Answer : [B]

Explanation:

Let the numbers be x and y .

Then, $x + y = 25$ and $x - y = 13$.

$$4xy = (x + y)^2 - (x - y)^2$$

$$= (25)^2 - (13)^2$$

$$= (625 - 169)$$

$$= 456$$

$$\therefore xy = 114.$$

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(11) The product of two numbers is 2028 and their H.C.F. is 13. The number of such pairs is:

- [A] 1
- [B] 2
- [C] 3
- [D] 4

Answer : [B]

Explanation:

Let the numbers $13a$ and $13b$.

Then, $13a \times 13b = 2028$

$\Rightarrow ab = 12$.

Now, the co-primes with product 12 are (1, 12) and (3, 4).

[Note: Two integers a and b are said to be **coprime** or relatively prime if they have no common positive factor other than 1 or, equivalently, if their greatest common divisor is 1]

So, the required numbers are (13 x 1, 13 x 12) and (13 x 3, 13 x 4).

Clearly, there are 2 such pairs.

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(12) The H.C.F. of two numbers is 11 and their L.C.M. is 7700. If one of the numbers is 275, then the other is:

[A] 279

[B] 283

[C] 308

[D] 318

Answer : [C]

Explanation:

Other number = $\left(\frac{11 \times 7700}{275} \right) = 308$.

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(13) The least number, which when divided by 12, 15, 20 and 54 leaves in each case a remainder of 8 is:

[A] 504

[B] 536

[C] 544

[D] 548

Answer : [D]

Explanation:

Required number = (L.C.M. of 12, 15, 20, 54) + 8

= 540 + 8

= 548.

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(14) The L.C.M. of two numbers is 48. The numbers are in the ratio 2 : 3. Then sum of the number is:

[A] 28

[B] 32

[C] 40

[D] 64

Answer : [C]

Explanation:

Let the numbers be $2x$ and $3x$.

Then, their L.C.M. = $6x$.

So, $6x = 48$ or $x = 8$.

\therefore The numbers are 16 and 24.

Hence, required sum = $(16 + 24) = 40$.

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(15) The greatest number which on dividing 1657 and 2037 leaves remainders 6 and 5 respectively, is:

[A] 123

[B] 127

[C] 235

[D] 305

Answer : [B]

Explanation:

Required number = H.C.F. of (1657 - 6) and (2037 - 5)
= H.C.F. of 1651 and 2032 = 127.

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(16) The ratio between the perimeter and the breadth of a rectangle is 5 : 1. If the area of the rectangle is 216 sq. cm, what is the length of the rectangle?

[A] 16 cm

[B] 18 cm

[C] 24 cm

[D] Data inadequate

[E] None of these

Answer : [B]

Explanation:

$$\frac{2(l + b)}{b} = \frac{5}{1}$$

$$\Rightarrow 2l + 2b = 5b$$

$$\Rightarrow 3b = 2l$$

$$b = \frac{2}{3}l$$

Then, Area = 216 cm²

$$\Rightarrow l \times b = 216$$

$$\Rightarrow l \times \frac{2}{3}l = 216$$

$$\Rightarrow l^2 = 324$$

$$\Rightarrow l = 18 \text{ cm.}$$

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(17) A towel, when bleached, was found to have lost 20% of its length and 10% of its breadth. The percentage of decrease in area is:

[A] 10%

[B] 10.08%

[C] 20%

[D] 28%

Answer : [D]

Explanation:

Let original length = x and original breadth = y .

$$\text{Decrease in area} = xy - \left(\frac{80}{100}x \times \frac{90}{100}y \right)$$

$$= \left(xy - \frac{18}{25}xy \right)$$

$$= \frac{7}{25}xy.$$

$$\therefore \text{Decrease \%} = \left(\frac{7}{25}xy \times \frac{1}{xy} \times 100 \right) \% = 28\%.$$

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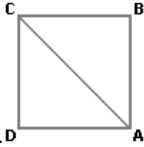
(18) A man walked diagonally across a square lot. Approximately, what was the percent saved by not walking along the edges?

- [A] 20
- [B] 24
- [C] 30
- [D] 33

Answer : [C]

Explanation:

Let the side of the square(ABCD) be x metres.



Then, $AB + BC = 2x$ metres.

$AC = 2x = (1.41x)$ m.

Saving on $2x$ metres = $(0.59x)$ m.

Saving % = $\left(\frac{0.59x}{2x} \times 100 \right) \% = 30\%$ (approx.)

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(19) The diagonal of a rectangle is 41 cm and its area is 20 sq. cm. The perimeter of the rectangle must be:

- [A] 9 cm
- [B] 18 cm
- [C] 20 cm
- [D] 41 cm

Answer : [B]

Explanation:

$$l^2 + b^2 = 41.$$

Also, $lb = 20$.

$$(l + b)^2 = (l^2 + b^2) + 2lb = 41 + 40 = 81$$

$$\Rightarrow (l + b) = 9.$$

$$\therefore \text{Perimeter} = 2(l + b) = 18 \text{ cm.}$$

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(20) A rectangular field is to be fenced on three sides leaving a side of 20 feet uncovered. If the area of the field is 680 sq. feet, how many feet of fencing will be required?

- [A] 34
- [B] 40
- [C] 68
- [D] 88

Answer : [D]

Explanation:

We have: $l = 20$ ft and $lb = 680$ sq. ft.

So, $b = 34$ ft.

$$\therefore \text{Length of fencing} = (l + 2b) = (20 + 68) \text{ ft} = 88 \text{ ft.}$$

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