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SQUARES AND SQUARE ROOTS

STEPS TO FIND **SQUARE ROOT** OF A NUMBER :

Step 0: Check if the given number is a perfect square.

> The number cannot end with {2,3,7,8}

> Digital sum is always {0,1,4,7,9}

Step 1: First of all group the number in pairs of 2 starting from the right.

Step 2: To get the tens place digit, Find the nearest square (equivalent or greater than or less than) to the first grouped pair from left and put the square root of the square.

Step 3: To get the unit's place digit of the square root

If the number ends in	Unit's place digit of the square root
1	1 or 9(10-1)
4	2 or 8(10-2)
9	3 or 7(10-3)
6	4or 6(10-4)
5	5
0	0

Question: 01

Which of the following numbers is a perfect square?

A. 141
B. 196
C. 124
D. 222

Answer: B

Explanation:

A. (11.874)^2=141

B. (14)^2=196

C. (11.135)^2=124

D. (14.89)^2=222

Question: 02

What least number must be added to 6072 to make it a perfect square?

A. 6
B. 10
C. 12
D. 16

Answer: C

Explanation:

In order to make 6072 a perfect square, we need to find the nearest square number to 6072.

To find the nearest square number, take square root of 6072

$\sqrt{(6072)}=77.9230$

So, the nearest square number to 6072 is 78^2=6084

Now, to calculate the least number, subtract 6072 from 6084,

So, the lowest number to be added to 6072 is = 6084 – 6072 = 12

Hence, to make 6072 a perfect square, 12 is to be added.

Question: 03

The value of {√10+ [√25+ (√108+ (√154+ (√225)))]} is

A. 4

B. 6

C. 8

D. 10

Answer: A

Explanation:

{√10+ [√25+ (√108+ (√154+ (√225)))]}

{√10+ [√25+ (√108+ (√154+15))]}

{√10+ [√25+ (√108+ (√169))]}

{√10+ [√25+ (√108+13)]}

{√10+ [√25+ (√121)]}

{√10+ [√25+11]}

{√10+ [√36]}

{√10+6}====>√16=4

Question: 04

The value of $\sqrt{(0.01)}+\sqrt{(0.81)}+\sqrt{(1.21)}+(\sqrt{0.0009})$ is

A. 2.03

B. 2.13

C. 2.07

D. 2.8

Answer: B

Explanation:

= √(0.01)+√(0.81)+√(1.21)+ (√0.0009)

=√(1/100)+√(81/100)+√(121/100)+√(9/10000)

= (1/10)+(9/10)+(11/10)+(3/100)

= 0.1+0.9+1.1+0.03

= 2.13

Question: 05

What should come in place of both *X* in the equation $(X/\sqrt{162})=(\sqrt{128}/X)$

A. 12

B. 14

C. 144

D. 132

Answer: A

Explanation:

$(X/\sqrt{162})=(\sqrt{128}/X)$ ∴

$x^2 = \sqrt{(128 \times 162)}$

$= \sqrt{(64 \times 2 \times 18 \times 9)}$

$= \sqrt{(8^2 \times 6^2 \times 3^{2)}}$

$= 8 \times 6 \times 3$

$= 144.$

$x = 144 = 12.$

Question: 06

The least perfect square, which is divisible by each of 21, 36 and 66 is

:

A. 213444
B. 214344
C. 214434
D. 231444

Answer: A

Explanation:

L.C.M. of 21, 36, 66 = 2772.

Now, 2772 = 2 x 2 x 3 x 3 x 7 x 11

To make it a perfect square, it must be multiplied by 7 x 11.

So, required number = $2^2 \times 3^2 \times 7^2 \times 11^2$ = 213444

Question: 07

If $3\sqrt{5} + \sqrt{125} = 17.88$, then what will be the value of $\sqrt{80} + 6\sqrt{5}$?

A. 13.41

B. 20.46

C. 21.66

D. 22.35

Answer: D

Explanation:

$3\sqrt{5} + \sqrt{125} = 17.88$

$3\sqrt{5} + \sqrt{(25 \times 5)} = 17.88$

$3\sqrt{5} + 5\sqrt{5} = 17.88$

$8\sqrt{5} = 17.88$

$\sqrt{5} = 2.235$

$\sqrt{80} + 6\sqrt{5} = \sqrt{(16 \times 5)} + 6\sqrt{5}$

$= 4\sqrt{5} + 6\sqrt{5}$

$= 10\sqrt{5} = (10 \times 2.235) = 22.35$

Question: 08

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 x 100) paise =

$\sqrt{5929}$ paise.

Number of members = $\sqrt{5929} = 77$.

Question: 09

If $\sqrt{5} = 2.236$, then the value of $(\sqrt{5}/2)-(10/\sqrt{5})+\sqrt{125}$ is equal to:

A. 5.59

B. 7.826

C. 8.944

D. 10.062

Answer: B

Explanation:

= (√5/2)-(10/√5)+ √125

= (2.236/2)-(10/2.236)+(5*2.236)

= 1.118-4.47227191+91.18

= 7.8257

Question: 10

$\sqrt{(0.0169 \times ?)} = 1.3$

A. 10

B. 100

C. 1000

D. None of these

Answer: B

Explanation:

Let $\sqrt{(0.0169 * X)} = 1.3$.

Then, $0.0169X = (1.3)^2 = 1.69$

$x = 1.69/0.0169 = 100$

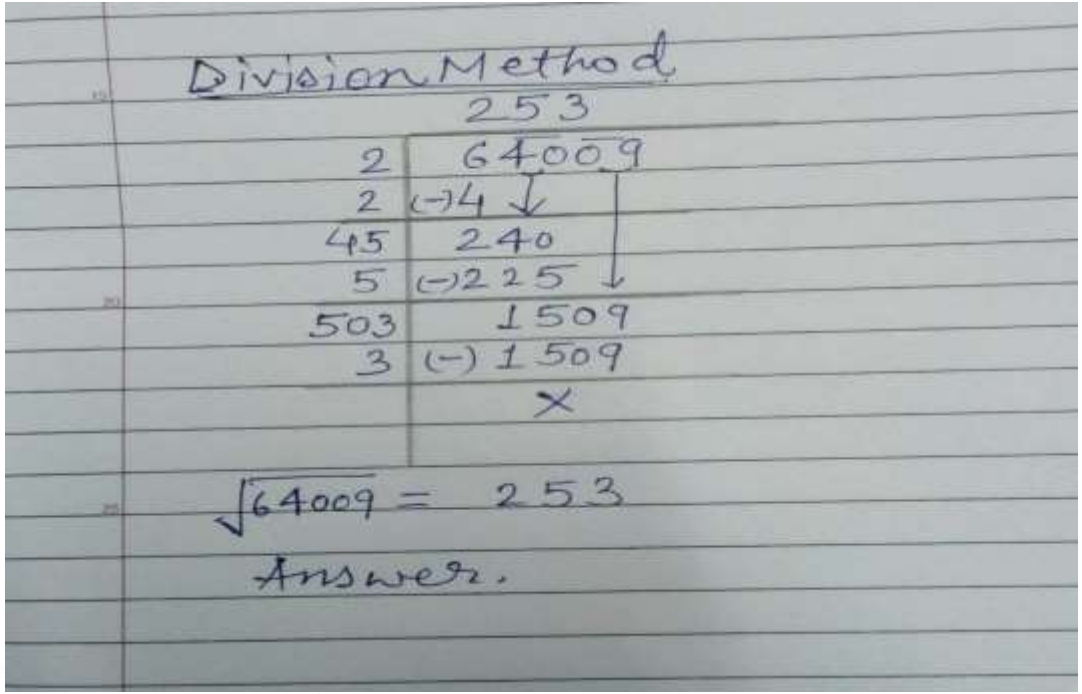
Question: 11

The square root of 64009 is:

A. 253
B. 347
C. 363
D. 803

Answer: A

Explanation:



Question: 12

If $\sqrt{1369} = 37$ then what is $\sqrt{13.69} + \sqrt{0.1369} + \sqrt{0.001369} + \sqrt{0.00001369}$?

A. 4.0021
B. 4.1107
C. 3.1232
D. 2.1323

Answer: B

Explanation:

√13.69 + √0.1369 + √ 0.001369 + √ 0.00001369

= √(1369 /100) + √(1369/10000) + √(1369/1000000) + √(1369/100000000)

= √1369 /√100 + √1369 /√10000 + √1369 /√1000000 + √1369 /√100000000

= 37/10 + 37/100 + 37/1000 + 37/ 10000

= 3.7 + 0.37 + 0.037 + 0.0037

= 4.1107

Question: 13

If $\sqrt{1+25/144} = (1+x/12)$, then the value of x is .

A. 1

B. 2

C. 5

D. 9

Answer: A

Explanation:

= √1+25/144 = (1+ x/12)

= √169/144 = (1+x/12)⇒ (1+x/12) = √169/144 =13/12 ⇒ x/12

= (13/12-1)= 1/12

⇒ x=1

Question: 14

112/ √196 * √576/12 *√256/8 =?

A. 8

B. 12

C. 16

D. 32

Answer: D

Explanation:

Given Exp

112/ √196 * √576/12 *√256/8 =?

= (112/14)*(24/12)* (16/8)

=(8*2*2)

= 32

Question: 15

If $\sqrt{841} = 29$, then $\sqrt{0.00000841} = ?$

A. 0.00029
B. 0.0029
C. 0.029
D. 0.29

Answer: B

Explanation:

Given

$\sqrt{841} = 29$

$\sqrt{0.00000841} = \sqrt{841}/\sqrt{100000000}$

$= 29/10000$

$= 0.0029$

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