



MATHS

BOOKS - RS AGGARWAL MATHS (HINGLISH)

SQUARES

Example

1. Is 196 a perfect square ? If so, find the number whose square is 196.



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2. Show that 1764 is a perfect square. Find the number whose square is 1764.

A. 42

B. 44

C. 38

D. 48

Answer: A





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3. Show that 6292 is not a perfect square.



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4. By what least number should 3675 be multiplies to get a perfect square number ?

Also. Find the number whose square is the new number.



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5. By what least number should 6300 be divided to get a perfect square number ? Find the number whose square is the new number.



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6. Find the square of
47

A. 4309

B. 2203

C. 2209

D. 4209

Answer: C



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7. Find the square of 39 by using the diagonal method.



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8. Find the square of 72 by using the diagonal method.



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9. Find the square of 527 by using the diagonal method.



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10. Find the square of 689 by using the diagonal method.



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Solved Examples

1. Give reason to show that none of the numbers given below is a perfect square.

(i) 2162 (ii) 6843 (iii) 9637 (iv) 6598



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2. Give reason to show that none of the numbers 640, 81000 and 360000 is a perfect square.



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3. State whether the square of the given number is even or odd:

(i) 523 (ii) 654 (iii) 6776 (iv) 7025



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4. Without adding find the sum:

$$(1 + 3 + 5 + 7 + 9)$$

$$(1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17)$$



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5. Express:

64 as the sum of 8 odd natural numbers.

121 as the sum of 11 odd natural numbers.



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6. Find the Pythagorean triplet whose smallest number is 12.



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7. Evaluate $\left[(337)^2 - (336)^2 \right]$.

A. 671

B. 672

C. 673

D. 674

Answer: C



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8. Using the identity

$(a + b)^2 = (a^2 + 2ab + b^2)$, evaluate:

$$(609)^2$$

$$(725)^2$$

$$(491)^2$$

$$(289)^2$$



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9. Evaluate

(i) 49×51

(ii) 30×32



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10. Find the square root of 784 by the long-division method.

A. 38

B. 28

C. 48

D. 58

Answer: B



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11. Evaluate $\sqrt{5329}$ using long-division method.



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12. Evaluate $\sqrt{16384}$.

A. 118

B. 138

C. 126

D. 128

Answer: D



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13. Find: $\sqrt{10609}$

A. 104

B. 103

C. 13

D. none of these

Answer: B



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14. Evaluate $\sqrt{66049}$.

A. 325

B. 257

C. 125

D. 115

Answer: B



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15. Find the cost of erecting of fence around a square field whose area is 9 hectares if fencing costs Rs 35 per metre.



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16. What least number must be subtracted from 7250 to get a perfect square ? Also, find the square root of this perfect square.



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17. Find the greatest number of 4 digits which is a perfect square.



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18. What least number must be added to 5607 to make the sum a perfect square ? Find this perfect square and its square root.



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19. Find the least number of six digits which is a perfect square. Find the square root of this number.



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20. Evaluate $\sqrt{42.25}$.

$$\sqrt{1.96}. \quad \sqrt{6.4009}.$$

$\sqrt{0.4225}$. $\sqrt{2}$ correct up to two places of decimal.

$\sqrt{0.8}$ correct up to two places of decimal.



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21. Evaluate $\sqrt{\frac{441}{961}}$



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22. Find the square root of $1\frac{56}{169}$.



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23. Find the value of (i) $\frac{\sqrt{243}}{\sqrt{363}}$.

(ii) $\sqrt{45} \times \sqrt{20}$.



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24. Find the square root of 324.



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25. Find the square root of 1764.



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26. Evaluate $\sqrt{4356}$.

A. 76

B. 66

C. 86

D. 46

Answer: B



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27. Evaluate $\sqrt{11025}$.

A. 115.

B. 105.

C. 104

D. 125.

Answer: B



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28. In an auditorium, the number of rows is equal to the number of chairs in each row. If the capacity of the auditorium is 2025, find the number of chairs in each row.

A. 45

B. 35

C. 25

D. 15

Answer: A



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29. Find the smallest number by which 396 must be multiplied so that the product becomes a perfect square.

A. 13

B. 11

C. 12

D. 15

Answer: B



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30. Find the smallest square number divisible by each one of the numbers 8, 9 and 10.



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31. Find the square root of 1764.

A. 52

B. 42

C. 32

D. 62

Answer: B



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32. Evaluate $(i)\sqrt{4356}$

$(ii)\sqrt{11025}$



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33. In an auditorium, the number of rows is equal to the number of chairs in each row. If the capacity of the auditorium is 2025, find the number of chairs in each row.



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34. Find the smallest number by which 396 must be multiplied so that the product becomes a perfect square.



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35. Find the smallest square number divisible by each one of the numbers 8, 9 and 10.



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Exercise 3 A

1. Using the prime factorisation method, find which of the following numbers are perfect squares:

- | | | | |
|----------|-----------|-------------|-------------|
| (i) 441 | (ii) 576 | (iii) 11025 | (iv) 1176 |
| (v) 5625 | (vi) 9075 | (vii) 4225 | (viii) 1089 |



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2. Show that each of the number is a perfect square, In each case, find the number whose square is the given number:

1225

2601

5929

7056

8281



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3. By what least number should the given number be multiplied to get a perfect square number? In each case, find the number whose square is the new number.

3675

2156

3332

1925

9075

7623

3380

2475

1575

9075

4851

3380

4500

7776

8820

4056



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4. Find the largest number of 2 digits which is a perfect square.

Find the largest number of 3 digits which is a perfect square.



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Exercise 3 B

1. Give reason to show that none of the number given below is a perfect square:

5372

5963

8457

9468

360

64000

2500000



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2. Which of the are square of even number ?

196

441

900

625

324

484

961

7396

8649

4225



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3. Without adding, find the sum:

$$(1 + 3 + 5 + 7 + 9 + 11 + 13)$$

$$(1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19)$$



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4. Express 81 as the sum of 9 odd numbers.



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5. Express 100 as the sum of 10 odd numbers.



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6. Write the Pythagoreana triplet whose smallest number is

6

14

16

20



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7. Evaluate:

$$(38)^2 - (37)^2$$

$$(75)^2 - (74)^2$$

$$(92)^2 - (91)^2$$

$$(105)^2 - (104)^2$$

$$(141)^2 - (140)^2$$

$$(218)^2 - (217)^2$$



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8. Using the formula

$(a + b)^2 = (a^2 + 2ab + b^2)$, evaluate:

$$(310)^2$$

$$(508)^2$$

$$(630)^2$$

$$(196)^2$$

$$(689)^2$$



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9. Evaluate: 69×71





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10. Evaluate: 94×106



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11. Evaluate: 88×92



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12. Evaluate: 78×82





13. Fill in the blanks:

The square of an even number is

A. an even number

B. an odd number

C. this depends on the number whose
square is being calculated

D. can not determine

Answer: A



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14. Fill in the blanks:

The square of an odd number is

A. is an even number

B. is an odd number

C. this depends on the number whose
square is being calculated

D. can not determine

Answer: B



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15. Fill in the blanks:

The square of a proper fraction is than the given fraction.



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16. Fill in the blanks:

n^2 = the sum of first n.....natural numbers.



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17. Write (T) for true and (F) for false for each of the statements given below:

The number of digits in a perfect square is even.



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18. Write (T) for true and (F) for false for each of the statements given below:

The square of a prime number is prime.



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19. Write (T) for true and (F) for false for each of the statements given below:

The sum of two perfect squares is a perfect square.



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20. Write (T) for true and (F) for false for each of the statements given below:

The difference of two perfect squares is a perfect square.



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21. Write (T) for true and (F) for false for each of the statements given below:

The product of two perfect squares is a perfect square.





Exercise 3 C

1. Find the value of each of the using the column method:

$$(23)^2$$

$$(35)^2$$

$$(52)^2$$

$$(96)^2$$

$$(67)^2$$

$$(86)^2$$

$$(137)^2$$

$$(256)^2$$



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Exercise 3 D

1. Find the square root of the number by using the method of prime factorisation:

225

441

729

1296

2025

4096

7056

8100

9216

11025

15876

17424



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2. Find the smallest number by which 252 must be multiplied to get a perfect square. Also, find the square root of the perfect square so obtained.



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3. Find the smallest number by which 2925 must be divided to obtain a perfect square. Also find the square root of the perfect square so obtained.





4. 1225 plants are to be planted of rows. Find the number of rows and the number of plants in each row.

A. 25

B. 35

C. 45

D. 65

Answer: B



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5. The students of a class arranged a picnic. Each student contributed as many rupees as the number of students in the class. If the total contribution is $Rs. 1156$, find the strength of the class.



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6. Find the least square number, exactly divisible by each one of the numbers: 6, 9, 15

and 20



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7. Find the least square number which is exactly divisible by each of the numbers 8, 12, 15 and 20.



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Exercise 3 E

1. Evaluate:

$$\sqrt{576}$$

A. 34

B. 44

C. 24

D. 54

Answer: C



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2. Evaluate:

$$\sqrt{1444}$$

A. 38

B. 32

C. 33

D. 34

Answer: A



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3. Evaluate:

$$\sqrt{4489}$$



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4. Evaluate:

$$\sqrt{6241}$$



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5. Evaluate:

$$\sqrt{7056}$$



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6. Evaluate:

$$\sqrt{9025}$$



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7. Evaluate:

$$\sqrt{11449}$$



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8. Evaluate:

$$\sqrt{14161}$$

A. 149

B. 109

C. 119

D. 129

Answer: C



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9. Evaluate:

$$\sqrt{10404}$$



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10. Evaluate:

$$\sqrt{17956}$$



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11. Evaluate:

$$\sqrt{19600}$$



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12. Evaluate:

$$\sqrt{92416}$$



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13. Find the number which must be subtracted from 2509 to make it a perfect square.



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14. Find the least number which must be subtracted from 7581 to obtain a perfect square. Find this perfect square and its square root.



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15. Find the least number which must be added to 6203 to obtain a perfect square. Find this perfect square and its square root.



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16. Find the least number which must be added to 8400 to obtain a perfect square. Find this perfect square and its square root.



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17. Find the least number of four digits which is a perfect square.



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18. Find the greatest number of five digits which is a perfect square. Also find the square root of the number of obtained.



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19. The area of a square field is 60025 m^2 . A man cycles along its boundary at 18 km/hr . In how much time will he return at the starting point ?



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Exercise 3 F

1. Evaluate:

$$\sqrt{1.69}$$

A. 1.2

B. 1.4

C. 1.5

D. 1.3

Answer: D



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2. Evaluate:

$$\sqrt{33.64}$$

A. 6.8

B. 5.8

C. 7.8

D. 8.8

Answer: B



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3. Evaluate:

$$\sqrt{156.25}$$



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4. Evaluate:

$$\sqrt{75.69}$$



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5. Evaluate:

$$\sqrt{9.8596}$$



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6. Evaluate:

$$\sqrt{10.0489}$$



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7. Evaluate:

$$\sqrt{1.0816}$$



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8. Evaluate:

$$\sqrt{0.2916}$$

A. 0.52

B. 0.36

C. 0.54

D. 0.45

Answer: C



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9. Evaluate $\sqrt{3}$ correct up to two places of decimal.



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10. Evaluate $\sqrt{2.8}$ correct up to two places of decimal.



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11. Evaluate $\sqrt{0.9}$ correct up to two places of decimal .



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12. Find the length of each side of a square whose area is equal to the area of a rectangle of length 13.6 meters and breadth 3.4 meters.



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Exercise 3 G

1. Evaluate:

$$\sqrt{\frac{16}{81}}$$



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2. Evaluate:

$$\sqrt{\frac{64}{225}}$$

A. $\frac{9}{15}$

B. $\frac{4}{15}$

C. $\frac{8}{15}$

D. $\frac{8}{25}$

Answer: C



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3. Evaluate:

$$\sqrt{\frac{121}{256}}$$



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4. Evaluate:

$$\sqrt{\frac{625}{729}}$$



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5. Evaluate:

$$\sqrt{3\frac{13}{36}}$$



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6. Evaluate:

$$\sqrt{4\frac{73}{324}}$$



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7. Evaluate:

$$\sqrt{3\frac{33}{289}}$$



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8. Evaluate:

$$\frac{\sqrt{80}}{\sqrt{405}}$$



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9. Evaluate:

$$\frac{\sqrt{1183}}{\sqrt{2023}}$$



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10. Evaluate:

$$\sqrt{98} \times \sqrt{162}$$



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Exercise 3 H

1. Which of the following number is not a perfect square ?

A. 7056

B. 3969

C. 5478

D. 4624

Answer: C



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2. Which of the following numbers is not a perfect square ?

A. 1444

B. 3136

C. 961

D. 2222

Answer: D



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3. Which of the following numbers is not a perfect square ?

A. 1843

B. 3721

C. 1024

D. 1296

Answer: A



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4. Which of the following numbers is not a perfect square ?

A. 1156

B. 4787

C. 2704

D. 3969

Answer: B



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5. Which of the following numbers is not a perfect square ?

A. 3600

B. 6400

C. 81000

D. 2500

Answer: C



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6. Which of the following cannot be the unit digit of a perfect square number ?

A. 6

B. 1

C. 9

D. 8

Answer: D



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7. The square of a proper fraction is

- A. larger than the fraction
- B. smaller than the fraction
- C. equal to the fraction
- D. none of these

Answer: B



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8. If n odd, then $(1 + 3 + 5 + 7 + \dots$ to n terms) is equal to

A. $(n^2 + 1)$

B. $(n^2 - 1)$

C. n^2

D. $(2n^2 + 1)$

Answer: C



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9. Which of the following is Pythagorean triplet(s)?

A. (2, 3, 5)

B. (5, 7, 9)

C. (6, 9, 11)

D. (8, 15, 17)

Answer: D



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10. What least number must be subtracted from 176 to make it a perfect square?

A. 16

B. 10

C. 7

D. 4

Answer: C



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11. What least number must be added to 526 to make it a perfect square ?

A. 3

B. 2

C. 1

D. 6

Answer: A



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12. What least number must be added to 15370 to make it a perfect square ?

A. 4

B. 6

C. 8

D. 9

Answer: B



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13. $\sqrt{0.9}=?$

A. 0.3

B. 0.03

C. 0.33

D. .94

Answer: D



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14. $\sqrt{0.1}=?$

A. 0.1

B. 0.01

C. 0.316

D. none of these

Answer: C



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15. $\sqrt{0.09} \times \sqrt{16} = ?$

A. 0.12

B. 1.2

C. 0.75

D. 12

Answer: B



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16. $\frac{\sqrt{288}}{\sqrt{126}} = ?$

A. $\frac{\sqrt{3}}{2}$

B. $(3)\sqrt{2}$

C. $\frac{3}{2}$

D. 1.49

Answer: C



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17. $\sqrt{2\frac{1}{4}} = ?$

A. $2\frac{1}{2}$

B. $1\frac{1}{2}$

C. $1\frac{1}{4}$

D. none of these

Answer: B



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18. Which of the following is the square of an even number ?

A. 196

B. 441

C. 625

D. 529

Answer: A



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19. Which of the following is the square of an odd number ?

A. 2116

B. 3844

C. 1369

D. 2500

Answer: C



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Test Paper 3

1. Evaluate $\sqrt{11236}$.



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2. Find the greatest number of five digits which is perfect square. What is the square root of this number ?



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3. Find the least number of four digits which is perfect square. What is the square root of this number ?



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4. Evaluate $\sqrt{0.2809}$.



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5. Evaluate $\sqrt{3}$ correct up to two places of decimal.



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6. Evaluate $\frac{\sqrt{46}}{\sqrt{243}}$.



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7. Which of the following numbers is not a perfect square ?

A. 529

B. 961

C. 1024

D. 1222

Answer: D



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8. $\sqrt{2\frac{1}{4}} = ?$

A. $2\frac{1}{2}$

B. $1\frac{1}{4}$

C. $1\frac{1}{2}$

D. none of these

Answer: C



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9. Which of the following is the square of an even number ?

A. 529

B. 961

C. 1764

D. 2809

Answer:



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10. What least number must be added to 521 to make it a perfect square ?

A. 3

B. 4

C. 5

D. 8

Answer:



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11. What least number must be subtracted from 178 to make it a perfect square ?

A. 6

B. 8

C. 9

D. 7

Answer:



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12. $\sqrt{72} \times \sqrt{98} = ?$

A. 42

B. 84

C. 64

D. 74

Answer: B



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13.

$$1 + 3 + 5 + 7 + 9 + 11 + 13 = (\dots\dots)^2.$$

A. 7

B. 8

C. 9

D. 5

Answer: A



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14. $\sqrt{1681} = \dots\dots\dots$



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15. The given number is a perfect square having n digits, where n is odd. Then, its square root will have Digits.



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