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Squares and Square root

1. A natural number is called a _____ or _____ if it is the square of some natural number.

2. $\sqrt{0.09}$ = _____ .

3. $\frac{1}{\sqrt{0.09}} \times \sqrt{5.76}$ = _____ .

4. $121^2 - 120^2$ = _____ .

5. Is (1, 2, 3) a Pythagorean triplet ?

6. Is 2352 a perfect square? If not, find the smallest number by which 2352 must be multiplied so that the product is a perfect square. Find the square root of the perfect square obtained.

7. Find the smallest number by which 9408 must be divided so that the quotient is a perfect square. Find the square root of the perfect square obtained.

8. The student of class VIII of a school donated Rs.2401 for prime ministers National relief fund. Each student donated as many rupees as the number of students in the class. Find the number of students in the class.

9. Find the least number which must be subtracted from 18265 so as to get a

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perfect square.

10. Find the least number which must be added to 893304 to obtain a perfect square.

11. Find the square root of 2.9 correct to two places of decimal.

12. Find the square root of $11\ ^{2}/_{3}$ correct to two places of decimal.

13. Find the square root of $21\ \frac{51}{169}$.

14. Find the least perfect square which is divisible by 5 , 6 and 8.

15. Find the smallest five digit number which is a perfect square.

16. Find the other two members of a Pythagorean triplet, one of the number of which is 16.

17. Check, is (12 , 35, 37) a Pythagorean triplet?

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Squares and Square Roots

1. Find the square root of 6400
2. Is 90 a perfect square
3. Is 2352 a perfect square? If not find the smallest multiple of2352 which is a perfect square. Find the square root of the new number.
4. Find the smallest number by which 9408 must be divided so that the quotient is a perfect square. Find the square root of the quotient.
5. Without doing any calculation, find the numbers which are surely not perfect square.
   i.) 153 ii.) 257 iii) 408 iv.) 441
6. Find the square root of the following numbers by the prime factorisation method.
   i.) 400 ii.) 9604 iii.) 8100 iv.)1764 v.) 5929 vi.) 9216
7. For each of the following numbers, find the smallest whole number by which it should be multiplied so as to get a perfect square. also find the square root of the square number so obtained.
   i.) 252 ii.) 2925 iii.) 396 iv.) 2028 v.) 1458 vi.) 768
8. For each of the following number, find the smallest whole number by which it should be divided so as to get a perfect square. Also find the square root of the square number so obtained.
   i.) 252 ii.) 180 iii.) 1008 iv.) 2028 v.) 1458 vi.) 768
9. The students of class viii of a school donated Rs 2401 in all, for prime minister's national relief fund. each student donated as many rupees as the no: of students in the class. Find the no: of students in the class.
10. 2118 plants are to be planted in a garden in such a way that each row contains as many plants as the no: of rows. Find the no: of rows and the no: of plants in each row.
11. Find the smallest square no: that is divisible by each of the no: 4, 9and10.
12. Find the smallest square no: that is divisible by each of the no: 8, 15 and 20.
13. Find the least no: that must be subtracted from 5607 so as to get a perfect square. Also find the square root of the perfect square.
14. Find the greatest 4- digit no: which is a perfect square.
15. Find the least no: that must be added to 1300 so as to get a perfect square .Also finds the square root of the perfect square.
16. Find the square root of 12.25.
17. Area of a square plot is $2304m^2$. find the side of the square plot. also find the square root of the perfect square.
18. find the square root of each of the following no: by division method.

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i.) 2304 ii.) 4489 iii.) 3481 iv.) 529 v.) 3249 vi.) 1369 vii.) 5776 viii.)7921 ix.) 576 x.) 1024 xi.) 3136 xii.) 900

19. Find the square root of the following decimal no:
    2.56 ii 7.29 iii. 51.84 iv 42.25 v 31.36

20. Find at least no: which must be subtracted from each of the following no:so as to get a perfect square. Also find the square root of the perfect square so obtained.
    i. 402 ii.1989 iii. 3250 iv. 825 v. 4000

21. Find the least no: which must be added to each of the following no: so as to get a perfect square. Also find the square root of the perfect square so obtained.
    i. 525 ii. 1750 iii. 252 iv. 1825 v. 6412

22. Find the length of the side of a square whose area is $441m^{2.}$
23. In a right triangle ABC angle B = 90^o

24. a. If AB=6 cm, BC=8cm, find AC b. If AC=13cm,BC= 5cm, find AB
25. A gardener has 1000 plants. He wants to plant this in such a way that the no: of rows and the no: of columns remain same. Find the minimum no: of plants he needs more for this.
26. There are 500 children in a school. for a P.Ed. drill. They have to stand in such a manner that the no. of rows is equal to the no: of columns. How many children would be left out in this arrangement? [least no :]

Cubes and Cube Roots

1. A perfect cube can end with exactly _____ zero.

2. If a and b are +ve integers such that $a^2 > b^2$ then a^3___b^3.

3. If a^2 ends in 5 then a^3 ends in _____.

4. If m is a cube root of n such that m^3 = _____.

5. The cube root of a quotient of two perfect cubes is the _____ of their cube roots.

6. Cube root of a rational number whose numerator and denominator are perfect cubes is also a _____ number.

7. A number n is a perfect cube if there is an integer m such that n=_____.

8. $\sqrt[3]{xy}$ = _____x_____.

9. $\sqrt[3]{\frac{p}{q}}$ =_____(q≠0, where p & q are perfect cubes.)

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10. The cube root of a negative perfect cube is_____.

11. $(x^m)^n = x$——

12. $y^n x^n$=__ (_____)^n

13. $x^m \div x^n$=_____ (if m>n)

14. $\sqrt[3]{625}$ =_____

16. Find $\sqrt[3]{\left(\frac{2}{3}\right)^4}$ =_____

17. $8^{-2/3} = {}^1/_4$ (True or False)

18. The radical form of $(y^p)^{1/q}$= _____

19. The index in $\sqrt[4]{2}$ _____.

20. The exponential form of cube root of 24 is _____.

21. $(0.04)^2$ =_____.

22. $\sqrt{0.04}$ =_____.

23. $\sqrt{x}$ is rational no. if x is a _____.

24. $(x^{-4})^{-7}$ =_____ for every rational no. x>0.

25. The reciprocal of $(x/y)^{-1}$ is _____.

26. 2700 is a perfect cube. True/False?

27. Cube root of a –ve no. does not exist. True/False?

28. Find the values of the following:

a) $\sqrt[3]{\frac{27}{64}}$ b) $\sqrt[3]{-1728}$ c) $\sqrt[3]{48228544}$

d) $\sqrt[3]{2744}$ e) $\sqrt[3]{74088}$ f) $\sqrt[3]{-157464}$

29. Find the cubes of the following:

a) 7 b) 270 c) 89 d) 3.4

e) 7/100 f) 4.2 g) 302 h) 21

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30. What is the smallest no. by which 392 must be multiplied so that the product is a perfect cube?

31. What is the smallest no. by which 675 may be multiplied so that the product is a perfect cube?

32. Is 243 a perfect cube?

33. Is 392 a perfect cube? If not, find the smallest natural number by which 392 must be multiplied so that the product is a perfect cube.

34. Is 53240 a perfect cube? If not, then by which smallest natural number should 53240 be divided so that the quotient is a perfect cube?

35. Is 1188 a perfect cube? If not, then by which smallest natural number should 1188 be divided so that the quotient is a perfect cube?

36. Is 68600 a perfect cube? If not, find the smallest number by which 68600 must be multiplied to get a perfect cube.

37. Which of the following numbers are not perfect cubes?

a) 216 b) 128 c) 1000 d) 100 e) 46656

38. Find the smallest number by which each of the following numbers must be multiplied to obtain a perfect cube.

a) 243 b)256 c)72 d)675 e)100

39. Find the smallest number by which each of the following numbers must be divided to obtain a perfect cube.

a) 81 b) 128 c) 135 d) 192 e) 704

40. Parikshit makes a cuboid of plasticine of sides 5cm, 2cm, 5cm. How many such cuboids will he need to form a cube?

41. Find the cube root of each of the following numbers by prime factorization method:

a) 64 b) 512 c) 10648 d) 27000 e) 15625

f) 13824 g) 110592 h) 46656 i) 175616 j) 91125

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42. State true or false:

a) Cube of any odd number is even.

b) A perfect cube does not end with two zeros.

c) If square of a number ends with 5, then its cube ends with 25.

d) There is no perfect cube which ends with 8.

e) The cube of two digit number may be three digit number.

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