



MATHS

BOOKS - RD SHARMA MATHS (HINGLISH)

SQUARES AND SQUARE ROOTS

Others

1. Is 225 a perfect square ? if so, find the number whose

square is 225.

2. Show that 63504 is perfect square. Also, find the number whose square is 63504.



5. Find the smallest number by which 25200 should be

divided so that the result is a perfect square.



7. Show that each of the following numbers is a perfect square. Also, find the number whose square is the given



perfect square : (i)14283 (ii) 1800 (iii) 2904





10. Which of the following numbers are perfect squares ?

11, 12, 16, 32, 36, 50, 64, 79, 81, 111, 121

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11. Using prime factorization method, find which of the following numbers are perfect squares ? 189, 225, 2048, 343, 441, 2916, 11025, 3549



12. By what number should each of the following numbers be multiplied to get a perfect square in each case ? Also, find the number whose square is the new number. (i)605(iv)2880



13. By what numbers should each of the following be divided to get a perfect square in each case? Also, find the number whose square is the new number.
(i)16562 (ii) 3698 (iii) 5103
(iv)3174 (v) 1575

14. Find the greatest number of two digits which is a

perfect square.



15. Find the least number of three digits which is perfect

square.

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16. Find the smallest number by which 4851 must be multiplied so that the product becomes a perfect square.



17. Find the smallest number by which 28812 must be

divided so that the quotient becomes a perfect square.



18. Find the smallest number by which 1152 must be divided so that it becomes a perfect square. Also, find the number whose square is the resulting number.

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19. None of the numbers 152, 7693, 14357, 88888, 798328 is

a perfect square.



20. 635, 98, 122 are not perfect squares as they leave

remainder 2 when divided by 3.

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21. 67, 146, 363, 10003 are not perfect squares as they leave remainder 3,2,3 and 3 respectively, when divided by

4,

22. Find the square root of the following number by prime factorization. 484

23.
$$(3,4,5), (5,12,13), (8,15,17)$$
 etc. are
Pythagorean triplets, because $3^2 + 4^2 = 25 = 5^2$
 $5^2 + 12^2 = 169 = 13^2 8^2 + 15^2 = 289 = 17^2$

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24. Write a Pythagorean triplet whose one member is :

(I)6 (ii) 18



25. The following numbers are not perfect squares. Give

reason. (I)1057 (ii) 23453 (iii) 7928 (iv)

222222

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26. What will be the units digit of the squares of the following numbers? (I)71 (ii) 599 (iii) 2783(iv) 1234

27. Which of the following end with digit 1 ? 123^2 , 77^2 , 82^2 , 161^2 , 109^2



28. Determine whether squares of the following numbers

are even or odd. (I)213 (ii) 3824 (iii) 9777 (iv)

40028



29. The following numbers are not perfect squares. Given reason. (I)64000 (ii) 89722 (iii) 222000 (iv)

505050



31. Without adding, find the sum: i) 1 + 3 + 5 + 7 + 9 ii)

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

1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23

32. Express: 49 as the sum of 7 Odd natural numbers. 121

as the sum of 11 odd natural numbers.



34. Express each of the following as the sum of two consecutive natural numbers : (I) 21^2 (ii) 13^2 (iii) 19^2



35. Find whether 55 is a perfect square or not?

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36. Observe the following pattern and find the missing

digits:

 $11^2 = 121$

 $101^2 = 10201$

 $1001^2 = 1002001$

 $10001^2 = 100020001$

 $100001^2 = 10000200001$

 $1000001^2 =$



37. Using the given pattern, find the missing numbers: $1^2 + 2^2 + 2^2 = 3^2$ $2^2 + 3^2 + 6^2 = 7^2$ $3^2 + 4^2 + 12^2 = 13^2$ $4^2 + 5^2 + ()^2 = 21^2$ $5^2 + ()^2 + 30^2 = 31^2$ $6^2 + 7^2 + ()^2 = ()^2$

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38. Using suitable patterns, compute the following : (I)

$$\frac{333^2}{12321} = \text{(ii)} \ \frac{666666^2}{12345654321} =$$



40. Show that the following numbers are not perfect

squares: (I)9327 (ii) 4058 (iii)22453

(iv) 7443522

41. The square of which of the following numbers would

be an odd numbers : (I)731 (ii) 3456 (iii)

5559 (iv) 42008

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42. What will be the units digit of the squares of the following numbers: (I)52
 (ii) 977

 (iii) 4583 (iv)78367
 (v) 52698
 (vi)

 99880 (vii)12796
 (viii) 55555
 (ix) 53924

43. Observe the following pattern $1+3=2^2$

 $1+3+5=3^2$ $1+3+5+7=4^2$ and write the value of 1+3+5+7+9+ upto n

terms.

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44. Observe the following pattern
$$2^2 - 1^2 = 2 + 1$$

 $3^2 - 2^2 = 3 + 2$ $4^2 - 3^2 = 4 + 3$ $5^2 - 4^2 = 5 + 4$ and find the value of (I) $100^2 - 99^2$ (ii) $111^2 - 109^2$ (iii) $99^2 - 96^2$

45. Which of the following triplets are Pythagorean? (I) (8, 15, 17) (ii) (18, 80, 82) (iii)(14, 48, 51) (iv) (10, 24, 26) (v)(16, 63, 65) (vi) (12, 35, 38)





47. Observe the following pattern $1 = \frac{1}{2} \{1 \times (1+1)\},\ 1+2 = \frac{1}{2} \{2 \times (2+1)\},\ 1+2+3 = \frac{1}{2} \{3 \times (3+1)\},\ 1+2+3+4 = \frac{1}{2} \{4 \times (4+1)\} \text{ and find the values of}$ each of the following : $1+2+3+4+5++50,\ 31+32++50$



49. Which of the following square numbers are squares

of even numbers ? 121,225, 256, 324,1296, 6561, 5476, 4489



50. By just examining the units digits, can you tell which

of the following cannot be whole squares? (I)1026



52. Write five numbers which you connot decide whether

they are square just by looking at the units digit.



53. Find the square root of the following number by

prime factorization. 324







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60. Find the squares of the following numbers using the

identity $(a + b)^2 = a^2 + 2ab + b^2$ (I)509 (ii) 211 (iii) 625

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61. Find the squares of the following numbers using the identity $(a - b)^2 = a^2 - 2ab + b^2$ (I)491 (ii) 189 (iii) 575

62. Find the squares of the following numbers using column method. Verify the result by finding the square using the usual multiplication: (I)25 (ii)

37 (iii) 54 (iv)71 (v) 96



63. Find the square root of the following number by prime factorization. 1764



64. Find the squares of the number127



65.	Find	the	squares	of	the	following	num	bers:
(I)425		(ii)	575			(iii)	405	
(iv)2	205		(v)		95		(vi)	745
(vii)125			(viii) 995	5				
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66. Find the squares of the following numbers using the identity $(a + b)^2 = a^2 + 2ab + b^2$: (I)405 (ii) 510 (iii) 1001 (iv)209 (v) 605



67. Find the squares of the following numbers using the identity $(a - b)^2 = a^2 - 2ab + b^2$: (I)395 (ii) 995 (iii) 495 (iv) 498 (v)99 (vi) 999 (vii) 599

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68. Find the squares of the following number by visual

method: 52

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69. Find the square root of 36 by successive subtractions.

70. Find the square root of 11025 by prime factorization.

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71. Find the square root of 7744 by prime factorization.
72. Find the square root of 298116 by prime factorization.



73. Find the smallest number by which 1100 must be multiplied so that the product becomes a perfect square. Also in each find the square root of the perfect square so obtained.

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74. Find the smallest number by which 9408 must be divided so that it becomes a perfect square. Also, find the square root of the perfect square so obtained.



75. 5929 students are sitting in an auditorium in such a manner that there are as many students in a row as there are rows in the auditorium. How many rows are there in the auditorium.



76. A general wishing to arrange his men, who were 335250 in number in the form of a square found that there were 9 men left over. How many were there in each row?



77. The product of two numbers is 1575 and their quotient is $\frac{9}{7}$. Find the numbers.



78. Find the smallest square number divisible by each

one of the numbers 8, 9 and 10.



79. What could be the possible ones digits of the square

root of each of the following numbers? (i) 9801 (ii) 99856

(iii) 998001 (iv) 657666025



80. Find the square root of the following number by

prime factorization. 441

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81. Find the square root of each of the following by prime factorization. (I)7056 (ii) 8281 (iii) 11664 (iv)47089 (v) 24336 (vi) 190969

82. Find the square root of each of the following byprime factorization. (I)586756 (ii) 27225(iii) 3013696

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83. Find the smallest number by which 180 must be multiplied so that it becomes a perfect square. Also find the square root of the perfect square so obtained.



84. Find the smallest number by which 147 must be multiplied so that it becomes a perfect square. Also find





85. Find the smallest number by which 3645 must be divided so that it becomes a perfect square. Also find the square root of the resulting number.



86. Find the smallest number by which 1152 must be divided so that it becomes a perfect square. Also, find the square root the number obtained.



87. The product of the two numbers is 1296. If one number is 16 times the other, find the numbers.



88. A welfare association collected Rs 202500 as donations from the residents. If each paid as many rupees as there were residents, find the number of residents.



89. A society collected Rs 92.16. Each member collected as many paise as there were members. How many members were there and how much did each contribute?

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90. A school collected Rs 2304 as fees from its students. If each student paid as many paise as there were students in the school, how many students were there in the school ?

91. The area of a square field is 5184 m^2 . A rectangular field, whose length is twice its breadth has its breadth has its permeter equal to the perimeter of the square field. Find the area of the rectangular field.



92. Find the least square number, exactly divisible by each one of the numbers: 6, 9, 15 and 20



93. Find the square roots of 121 and 169 by the method of

repeated subtraction.



the number of students in the class.

96. A PT teacher wants to arrange the maximum possible number of 6000 students in a field such that the number of rows is equal to the number of columns. Find the number of rows if 71 were left out after arrangement.

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97. Find the number of digits in the square roots of each of the following perfect squares : (i)390625 (ii)1758276 (iii152399025



98. Find the square root of the following numbers by

long division method :54756



99. Find the least number which must be subtracted from 18265 to make it a perfect square. Also, find the square root of the resulting number.

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100. Find the least number which must be added to 306452 to make it a perfect square.



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

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103. Find the square root of each of the following by long division method: (i)12544 (ii)97344



106. Find the square root of the following by long

division method: 6407522209



107. Find the least number which must be subtracted from the following numbers to make them a perfect square : (i) 2361(ii)194491

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108. Find the least number which must be subtracted

from 5607 to make a perfect square.



109. Find the greatest number of 5 digits which is a perfect square.



110. Find the least number of 4 digits which is a perfect

square.

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111. Find the least number of six digits which is a perfect

square.



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



113. A general arrangers his soldiers in rows to form a perfect square. He finds that in doing so, 60 soldiers are are left out. If the total number of soldiers be 8160, find the number of soldiers in each row.



114. The area of a square field is 60025 m^2 . A man cycles

along its boundary at 18 km// h. In how must time will he



Rs 5 per metre.

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116. Find the greatest number of three digits which is a

perfect square.



117. Find the smallest number which must be added to

2300 so that it becomes a perfect square.







122. Find the square root of the 0.813604 in the decimal

form.

123. Find the square root of the 0.00002025 in the

decimal form.



126. Find the square root of the 225.6004 in the decimal

form.



Find the length of each side of the field.

129. The area of a square field is $30rac{1}{4}\ m^2$. Calculate the

length of the side of the square.



130. Find the length of side of a square playground

whose area is equal to the area of a rectangular field of

dimensions 72 m and 338 m.

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131. Find the square root of 447. 3225.



132. Find the square root of 0.00008281.

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122 Find the square root of 0.052261	
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134. A decimal fraction is multiplied by itself. If the

product is 251953. 8025, find the fraction.



137. Find the square root of the following numbers in

decimal form: 0.7225

138. Find the square root of the following numbers in

decimal form: 84.8241



139. What is that fraction which when multiplied by itself

given 227. 798649?

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140. The area of a square playground is 256.6404 square

metres. Find the length of one side of the playground.



141. What is the fraction which when multiplied by itself

given 0.00053361?



144. Find the value of $\sqrt{103.0225}$ and hence find the value of (I) $\sqrt{10302.25}$ (ii) $\sqrt{1.030225}$

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145. Find the square root of 2 correct to three places of decimal.

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146. Find the square root of 3 correct to three places of decimal.



147. Find the square root of 237. 615 correct to three

places of decimal.

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148. Find the square root of $10\frac{2}{3}$ correct to three places of decimal.

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149. Find the square root of $\frac{3}{7}$ correct to four places of decimal.





150. Given that $\sqrt{2} = 1.414$ and $\sqrt{5} = 2.236$, evaluate each of the following $\sqrt{\frac{36}{5}}$ (ii) $\sqrt{\frac{625}{98}}$

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151. Given that : $\sqrt{2} = 1.414, \sqrt{3} = 1.732, \sqrt{5} = 2.236 \text{ and } \sqrt{7} = 2.646,$ evaluate each of the following : $\sqrt{\frac{144}{7}}$ **Vatch Video Solution**

Given

that

 $\sqrt{2} = 1.414, \ \sqrt{3} = 1.732, \ \sqrt{5} = 2.236 \ and \ \sqrt{7} = 2.646,$ find the square roots of the following : $\frac{169}{75}$





 $\sqrt{2}=1.\ 414,\ \sqrt{3}=1.\ 732,\ \sqrt{5}=2.\ 236\ and\ \sqrt{7}=2.\ 646,$





156. Using square root table, find the square roots of the

following :(i)7(ii) 15



157. Using square root table, find the square roots of the

following : (i)82



159. Using square root table, find the square roots of the

following :(i) 1312

160. Using square root table, find the square roots of the following : (i) $\frac{99}{144}$ (ii) $\frac{57}{100}$ Watch Video Solution



162. Using square root table, find the square roots of the

following : 110 (ii) 1110 11.11



163. The area of a square field is $325 m^2$. Find the approximate length of one side of the field.

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164. Find the length of a side of a square, whose area is equal to the area of a rectangle with sides 240 m and 70

m.

