doubtnut
India's Number 1 Education App

MATHS

BOOKS - RD SHARMA MATHS (ENGLISH)

OPERATIONS ON RATIONAL NUMBERS

Others

1. $Add \frac{3}{5} and \frac{13}{5}$

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2. $Add \frac{7}{9} and \frac{-12}{9}$

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3. $Add \frac{-5}{9} \ and \frac{-17}{9}$

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4. $Add \frac{4}{-11} \ and \frac{7}{11}$

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5. $Add \frac{5}{12} and \frac{3}{8}$

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6. $Add \frac{7}{9} and\ 4$

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7. $Add \frac{3}{8} and \frac{-5}{12}$

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8. Simplify: $\frac{8}{-15} + \frac{4}{-3}$

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9. Simplify: $\frac{7}{-26} + \frac{16}{39}$

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10. Add the following rational numbers:

(i) $\frac{-5}{7}$ and $\frac{3}{7}$

(ii) $\frac{-15}{4}$ $and \frac{7}{4}$

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11. Add the following rational numbers:

(i) $\frac{-8}{11}$ $and \frac{-4}{11}$

(ii) $\frac{6}{13}$ and $\frac{-9}{13}$

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12. Add the following rational numbers:

$\frac{3}{4}$ and $\frac{-3}{5}$ (ii) -3 $and \frac{3}{5}$

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13. Add the following rational numbers: (i) $\frac{-7}{27}$ and $\frac{11}{18}$ (ii) $\frac{31}{-4}$ and $\frac{-5}{8}$

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14. Simplify: (i) $\frac{8}{9} + \frac{-11}{6}$ (ii) $\frac{-5}{16} + \frac{7}{24}$

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15. Simplify: (i) $\frac{1}{-12}+\frac{2}{-15}$ (ii) $\frac{-8}{19}+\frac{-4}{57}$

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16. Add and express the sum as a mixed fraction: (i) $\frac{-12}{5}+\frac{43}{10}$ (ii) $\frac{24}{7}+\frac{-11}{4}$ (iii) $\frac{-31}{6}+\frac{-27}{8}$

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17. Subtract

(i) 9 from 4

(ii) 9 from -4

(iii) -8 from 3

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18. Subtract $\frac{-3}{8}$ from $\frac{-5}{7}$

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19. Subtract $\frac{-3}{5}$ from $\frac{9}{10}$.

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20. The sum of two rational numbers is $\frac{-3}{5}$.

If one of the number is $\frac{-9}{20}$, find the other.

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21. What number should be added to $\frac{-5}{8}$ so as to get $\frac{5}{9}$?

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22. What should be subtracted from $\frac{-3}{4}$ so as to get $\frac{5}{6}$?

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23. Simplify : (i) $\frac{-2}{3}+\frac{5}{9}-\frac{-7}{6}$ (ii) $\frac{5}{12}+\frac{-5}{18}-\frac{7}{24}$

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24. Subtract the first rational number from the second in each of the following: (i) $\frac{3}{8}, \frac{5}{8}$ (ii) $\frac{-7}{9}, \frac{4}{9}$

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25. Subtract the first rational number from the second in each of the following: $\frac{-2}{11}, \frac{-9}{11}$ (ii) $\frac{11}{13}, \frac{-4}{13}$

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26. Evaluate each of the following: $\frac{2}{3} - \frac{3}{5}$ (ii) $-\frac{4}{7} - \frac{2}{-3}$

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27. Evaluate each of the following:

(i) $\frac{4}{7} - \frac{-5}{-7}$

(ii) $-2 - \frac{5}{9}$

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28. The sum of the two numbers is $\frac{5}{9}$. If one of the numbers is $\frac{1}{3}$, Find the other.

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29. The sum of two numbers is $\frac{-1}{3}$. If one of the numbers is $\frac{-12}{3}$, Find the other.

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30. The sum of two numbers is $\frac{-4}{3}$. If one of the numbers is $05,$ find the other.

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31. The sum of two rational numbers is $-8.$ If one of the numbers is $\frac{-15}{7}$, find the other.

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32. What number should be added to $\frac{-7}{8}$ so as to get $\frac{5}{9}$?

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33. What should be added to $\frac{-5}{11}$ so as to get $\frac{26}{33}$?

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34. What number should be added to $\frac{-5}{7}$ to get $\frac{-2}{3}$?

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35. What number should be subtracted from $\frac{-5}{3}$ to get $\frac{5}{6}$?

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36. What number should be subtracted from $3\frac{1}{2}$ to get $1\frac{2}{7}$

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37. What should be added to $\left(\frac{2}{3}+\frac{3}{5}\right)$ to get $\frac{-2}{15}$?

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38. What should be added to $\left(\frac{1}{2}+\frac{1}{3}+\frac{1}{5}\right)$ to get 3?

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39. What should be subtracted from $\left(\frac{3}{4}-\frac{2}{3}\right)$ to get $\frac{-1}{6}$?

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40. Simplify: $\frac{-3}{2}+\frac{5}{4}+\frac{7}{4}$ (ii) $\frac{5}{3}-\frac{7}{6}+\frac{-2}{3}$

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41. Simplify: $\frac{5}{4}-\frac{7}{6}-\frac{-2}{3}$ (ii) $\frac{-2}{5}-\frac{-3}{10}-\frac{-4}{7}$

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42. Fill in the blanks: $\frac{-4}{13} - \frac{-3}{26} =$ (ii) $\frac{-9}{14} + \quad = -1$

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43. Fill in the blanks:

(i) $\frac{-7}{9} + (\ ) = 3$

(ii) $(\ ) + \frac{15}{23} = 4$

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44. Multiply:

(i) $\frac{3}{4}$ by $\frac{5}{7}$

(ii) $\frac{3}{7}$ by $\left(\frac{-4}{5}\right)$

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45. Multiply:

(i) $\left(\frac{-5}{9}\right)$ by 4

(ii) $\left(\frac{-36}{7}\right)$ by $\left(-\frac{28}{9}\right)$

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46. Simplify:

(i) $\frac{-8}{7} \times \frac{14}{5}$

(ii) $\frac{13}{6} \times \frac{-18}{91}$

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47. Simplify:

(i) $\frac{-5}{9} \times \frac{72}{-125}$

(ii) $\frac{-22}{9} \times \frac{-51}{-88}$

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48. Simplify: (i)

$$\left(\frac{-16}{5} \times \frac{20}{8}\right) - \left(\frac{15}{5} \times \frac{-35}{5}\right)$$ (ii)

$$\left(\frac{-3}{2} \times \frac{4}{5}\right) + \left(\frac{9}{5} \times \frac{-10}{3}\right) - \left(\frac{1 \times 3}{2 \times 4}\right)$$

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49. Multiply:

(i) $\frac{7}{11} by \frac{5}{4}$

(ii) $\frac{5}{7} by \frac{-3}{4}$

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50. Multiply:

(i) $\frac{-2}{9} by \frac{5}{11}$

(ii) $\frac{-3}{17} by \frac{-5}{-4}$

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51. Multiply:

(i) $\frac{-5}{17} by \frac{51}{-60}$

(ii) $\frac{-6}{11} by \frac{-55}{36}$

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52. Multiply:

(i) $\frac{-8}{25}$ by $\frac{-5}{16}$

(ii) $\frac{6}{7}$ by $\frac{-49}{36}$

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53. Simplify each of the following and express the result as a rational number in standard from:

(i) $\frac{-16}{21} \times \frac{14}{5}$

(ii) $\frac{7}{6} \times \frac{-3}{28}$

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54. Simplify each of the following and express the result as a rational number in standard from:

(i) $\frac{-19}{36} \times 16$

(ii) $\frac{-13}{9} \times \frac{27}{-26}$

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55. Simplify:

(i) $\left(-5 \times \frac{2}{15}\right) - \left(-6 \times \frac{2}{9}\right)$

(ii) $\left(\frac{-9}{4} \times \frac{5}{3}\right) + \left(\frac{13}{2} \times \frac{5}{6}\right)$

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56. Simplify: (i)

$$\left(\frac{13}{9} \times \frac{-15}{2}\right) + \left(\frac{7}{3} \times \frac{8}{5}\right) + \left(\frac{3}{5} \times \frac{1}{2}\right)$$

(ii)

$$\left(\frac{3}{11} \times \frac{5}{6}\right) - \left(\frac{9}{12} \times \frac{4}{3}\right) + \left(\frac{5}{13} \times \frac{6}{15}\right)$$

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57. Write the reciprocal of each of the following rational numbers:

(i) 7

(ii) -11

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58. Write the reciprocal of each of the following rational numbers:

(i) $\frac{2}{5}$

(ii) $\frac{-7}{15}$

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59. Find the reciprocal of: $\frac{-3}{8} \times \frac{-7}{13}$

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60. Divide:

(i) $\frac{3}{5}$ $by \frac{4}{25}$

(ii) $\frac{8}{9}$ $by \frac{4}{3}$

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61. Divide:

(i) $\frac{-16}{21}$ $by \frac{4}{3}$

(ii) $\frac{-8}{13}$ $by \frac{3}{-26}$

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62. The product of two rational numbers is $\frac{-28}{81}$. If one of the numbers is $\frac{14}{27}$, find the other.

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63. By what number should we multiply $\frac{3}{-14}$, so that the product may be $\frac{5}{12}$.

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64. Divide:

(i)1 by $\frac{1}{2}$

(ii) $5\ by\ \frac{-5}{7}$

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65. Divide:

(i) $\frac{-3}{4}$ $by \frac{9}{-16}$

(ii) $\frac{-7}{8}$ by $\frac{-21}{16}$

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66. Divide:

(i) $\frac{7}{-4}$ $by \frac{63}{64}$

(ii) 0 by $\frac{-7}{5}$

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67. Divide: $\frac{-3}{4}$ by -6 (ii) $\frac{2}{3}$ by $\frac{-7}{12}$

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68. Find the value and express as a rational number in standard form:

(i) $\frac{2}{5} \div \frac{26}{15}$

(ii) $\frac{10}{3} \div \frac{-35}{12}$

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69. Find the value and express as a rational number in standard form: (i) $-6 \div \left(\frac{-8}{17}\right)$ (ii) $\frac{40}{98} \div (-20)$

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70. The product of two rational number is 15. If one of the numbers is 10 , find the other.

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71. The product of two rational numbers is $\frac{-8}{9}$. if one of the numbers is $\frac{-4}{15}$, find the other.

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72. By what number should we multiply $\frac{-1}{6}$ so that the product may be $\frac{-23}{9}$?

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73. By what number should we multiply $\frac{-15}{28}$ so that the product may be $\frac{-5}{7}$?

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74. By what number should we multiply $\frac{-8}{13}$ so that the product may be 24?

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75. By what number should $\frac{-3}{4}$ be multiplied in order to produce $\frac{2}{3}$?

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76. Find $(x+y) \div (x-y)$, if (i) $x = \frac{2}{3}, y = \frac{3}{2}$ (ii) $x = \frac{2}{5}, y = \frac{1}{2}$ (iii) $x = \frac{5}{4}, y = \frac{-1}{3}$

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77. The cost of $7\frac{2}{3}$ metres of rope is rs $12\frac{3}{4}$.

Find the cost of cloth per metre.

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78. The cost of $2\frac{1}{3}$ metres of cloth is Rs $75\frac{1}{4}$.

Find its cost per metre.

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79. By what number should $\frac{-33}{16}$ be divided to get $\frac{-11}{4}$?

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80. Divide the sum of $\frac{-13}{5}$ and $\frac{12}{7}$ by the product of $\frac{-31}{7}$ and $\frac{-1}{2}$

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81. Divide the sum of $\frac{65}{12}\ and \frac{8}{3}$ by their difference.

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82. If 24 trousers of equal size can be prepared in 54 metres of cloth, what length of cloth is required for each trouser ?

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83. Insert 10 rational numbers between $\frac{-3}{11}$ $and \frac{8}{11}$.

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84. Insert 100 rational numbers between $\frac{-3}{13}$ and $\frac{9}{13}$

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85. Find six rational numbers between $\frac{-4}{8}$ and $\frac{3}{8}$

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86. Find 10 rational numbers between $\frac{7}{13}$ and $\frac{-4}{13}$

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87. State true or false: (i) Between any two distinct integers there is always an integer. (ii) Between any two distinct rational numbers there is always a rational number. (iii) Between any two distinct rational numbers there are infinitely many rational numbers.

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88. What should be added to $\frac{-7}{9}$ to get 2?

(a) $\frac{11}{9}$

(b) $\frac{-11}{9}$

(c) $\frac{-25}{9}$

(d) $\frac{25}{9}$

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89. What should be subtracted from $\frac{-2}{3}$ to get $\frac{4}{5}$?

(a) $\frac{22}{15}$

(b) $\frac{-22}{15}$

(c) $\frac{15}{22}$

(d) $\frac{-15}{22}$

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90. Reciprocal of $\frac{-3}{4}$ is

(a) $\frac{3}{4}$

(b) $\frac{4}{3}$

(c) $\frac{-4}{3}$

(d) None of these

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91. The multiplicative inverse of $\frac{4}{-5}$ is

(a) $-\frac{4}{5}$

(b) $\frac{5}{4}$

(c) $\frac{5}{-4}$

(d) $\frac{-5}{-4}$

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92. $1 \div \frac{-5}{7} =$ (a) $\frac{2}{7}$ (b) $\frac{5}{7}$ (c) $-\frac{2}{7}$ (d) $\frac{-7}{5}$

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93. Choose the correct option

$\frac{-5}{13} + ? = -1$

(a) $\frac{8}{13}$

(b) $\frac{-8}{13}$

$(c)\frac{-18}{13}$

(d) $\frac{18}{13}$

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94. $0 \div \frac{3}{5} =$

(a) 0

(b) $\frac{5}{3}$

(c) $\frac{3}{5}$

(d) $-\frac{3}{5}$

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95. Choose the correct option $-2\frac{3}{7}+4=\ ?$

a) $\frac{-11}{7}$

(b) $\frac{11}{7}$

(c) $\frac{-45}{7}$

(d) $\frac{45}{7}$

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96. If the product of two non-zero rational numbers is 1, then they are

(a) Additive inverse of each other

(b) Multiplicative inverse of each other

(c) Reciprocal of each other

(d) Both (b) and (c)

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97. The product $3\frac{1}{7} \times 1\frac{5}{6} \times 1\frac{2}{5} \times 1\frac{1}{11}$ is equal to

(a)$5\frac{8}{5}$

(b) $5\frac{4}{5}$.

(c) $8\frac{4}{5}$

(d) $4\frac{4}{5}$

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98. $1 \div \frac{1}{3} =$

(a) $\frac{1}{3}$

(b) 3

(c) $1\frac{1}{3}$

(d) $3\frac{1}{3}$

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99. Choose the correct option

$$(-2) \div \left(-\frac{5}{3}\right) =$$

(a) $\frac{5}{6}$

(b) $-\frac{5}{6}$

(c) $\frac{6}{5}$

(d) $\frac{-6}{5}$

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100. If $\frac{x}{2} + \frac{1}{3} = 1,$ then $x =$

(a) $\frac{3}{4}$

(b) $\frac{4}{3}$

(c) $-\frac{3}{4}$

(d) $\frac{-4}{3}$

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101. Choose the correct option

$$\frac{5}{4}-\frac{7}{6}-\frac{-2}{3}=$$

(a) $\frac{3}{4}$

(b) $-\frac{3}{4}$

(c) $\frac{-7}{12}$

(d) $\frac{7}{12}$

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