# MATHS

# BOOKS - RD SHARMA MATHS (HINGLISH)

# RATIONAL NUMBERS

All Questions

**1.** Every natural number is a positive rational number.

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**2.** Every negative integer is a negative rational number.

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**3.** Write down the numerator of each of the following rational numbers: $-\frac{7}{5}$ (ii) $\frac{15}{-4}$

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**4.** Write down the numerator of each of the following rational numbers: $\frac{-17}{-21}$ (ii) $\frac{8}{9}$ $5$

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**5.** Write down the denominator of each of the following rational numbers: $\frac{-4}{5}$ (ii) $\frac{11}{-34}$

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**6.** Write down the denominator of each of the following rational numbers: $\frac{-15}{-82}$ (ii) $15\ 0$

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**7.** Write down the rational number whose numerator is $(-3) \times 4$, and whose denominator is $(34-23) \times (7-4)$.

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**8.** Write the following rational numbers as integers: $\frac{7}{1}, \frac{-12}{1}, \frac{34}{1}, \frac{-73}{1}, \frac{95}{1}$

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**9.** Write the following integers as rational numbers with denominator 1:

$-15,\ 17,\ 85,\ -100$

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**10.** Write down the rational number whose numerator is the smallest three digit number and denominator is the largest four digit number.

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**11.** Separate positive and negative rational numbers from the following rational numbers:

$$\frac{-5}{-7}, \frac{12}{-5}, \frac{7}{4}, \frac{13}{-9}, 0, \frac{-18}{-7}, \frac{-95}{116}, \frac{-1}{-9}$$

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**12.** Which of the following rational numbers are positive: (i) $\frac{-8}{7}$ (ii) $\frac{9}{8}$

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**13.** Which of the following rational numbers are positive: (i) $\frac{-19}{-13}$ (ii) $\frac{-21}{13}$

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**14.** Which of the following rational numbers are negative? (i) $\frac{-3}{7}$ (ii) $\frac{-5}{-8}$

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**15.** Which of the following rational numbers are negative? (i) $\frac{9}{-83}$ (ii) $\frac{-115}{-197}$

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**16.** Write each of the following rational numbers with positive denominator: $\frac{5}{-7}, \frac{15}{-28}, \frac{-17}{-13}$

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**17.** Express $\frac{-5}{6}$ as a rational number with numerator: (i) $-15$ (ii) 10

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**18.** Express $\frac{-4}{5}$ as a rational number with denominator (i)20 (ii) -30

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**19.** Express $\frac{-48}{60}$ as a rational number with denominator 5.

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**20.** Express $\frac{42}{-63}$ as a rational number with denominator 3.

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**21.** Fill in the blanks. (i) $\frac{5}{-7} = \frac{\cdot}{35} = \frac{\cdot}{-77}$ (ii) $\frac{7}{13} = \frac{35}{\cdot} = \frac{-63}{\cdot}$

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**22.** In each of the following, find an equivalent form of the rational numbers having a common denominator (i) $\frac{5}{6}$ $and$ $\frac{7}{9}$ (ii) $\frac{2}{3}, \frac{5}{6}$ $and$ $\frac{7}{12}$

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**23.** Express each of the following as a rational number with positive denominator: (i) $\frac{-15}{-28}$ (ii) $\frac{6}{-9}$

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**24.** Express each of the following as a rational number with positive denominator: (i) $\frac{-28}{-11}$ (ii) $\frac{19}{-7}$

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**25.** Express $\frac{3}{5}$ as a rational number with numerator: (i) 6 (ii) -15

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**26.** Express $\frac{3}{5}$ as a rational number with numerator: (i)21 (ii) -27

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**27.** Express $\frac{5}{7}$ as a rational number with denominator: (i) $-14$ (ii) 70

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**28.** Express $\frac{5}{7}$ as a rational number with denominator: $-28$ (ii) $-84$

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**29.** Express $\frac{3}{4}$ as a rational number with denominator: 20 (ii) 36

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**30.** Express $\frac{3}{4}$ as a rational number with denominator: 44 (ii) $-80$

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**31.** Express $\frac{2}{5}$ as a rational number with numerator $-56$ (ii) 154

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**32.** Express $\frac{2}{5}$ as a rational number with numerator $-750$ (ii) 500

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**33.** Express $\frac{-192}{108}$ as a rational number with numerator: 64 (ii) $-16$

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**34.** Express $\frac{-192}{108}$ as a rational number with numerator: (i)32 (ii) $-48$

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**35.** Express $\frac{168}{-294}$ as a rational number with denominator: 14 (ii) $-7$

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**36.** Express $\frac{168}{-294}$ as a rational number with denominator: $-49$ (ii) 1470

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**37.** Write $\frac{-14}{42}$ in a form so that the numerator is equal to: $-2$ (ii) 7

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**38.** Write $\frac{-14}{42}$ in a form so that the numerator is equal to: 42 (ii) $-70$

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**39.** Select those rational numbers which can be written as a rational numbers with numerator 6: $\frac{1}{22}, \frac{2}{3}, \frac{3}{4}, \frac{4}{-5}, \frac{5}{6}, \frac{-6}{7}, \frac{-7}{8}$

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**40.** Select those rational numbers which can be written as a rational number with denominator 4:

$\frac{7}{8}, \frac{64}{16}, \frac{36}{-12}, \frac{-16}{17}, \frac{5}{-4}, \frac{140}{28}$

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**41.** In each of the following, find an equivalent form of the rational number having a common denominator: $\frac{3}{4}$ $and$ $\frac{5}{12}$ (ii) $\frac{2}{3}, \frac{7}{6}$ $and$ $\frac{11}{12}$ $\frac{5}{7}, \frac{3}{8}, \frac{9}{14}$ $and$ $\frac{20}{21}$

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**42.** Find whether the following rational numbers are in the lowest form or not. $\frac{17}{79}$ (ii) $\frac{24}{320}$

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**43.** Express each of the following rational numbers to the lowest form. $\frac{12}{16}$ (ii) $\frac{-60}{72}$

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**44.** Express each of the following rational numbers to the lowest form. $\frac{-24}{-36}$ (ii) $\frac{91}{-364}$

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**45.** Fill in the blanks: $\frac{90}{165} = \frac{-6}{.} = \frac{.}{-55}$

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**46.** Determine whether the following rational numbers are in the lowest form or not: $\frac{65}{84}$ (ii) $\frac{-15}{32}$

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**47.** Determine whether the following rational numbers are in the lowest form or not: $\frac{24}{128}$ (ii) $\frac{-56}{-32}$

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**48.** Express each of the following rational numbers to the lowest form: $\frac{4}{22}$ (ii) $\frac{-36}{180}$

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**49.** Express each of the following rational numbers to the lowest form: $\frac{132}{-428}$ (ii) $\frac{-32}{-56}$

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**50.** Fill in the blanks: $\frac{-5}{7} = \frac{\cdot}{35} = \frac{\cdot}{49}$ (ii) $\frac{-4}{-9} = \frac{\cdot}{18} = \frac{12}{\cdot}$

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**51.** Fill in the blanks: $\frac{6}{-13} = \frac{-12}{.} = \frac{24}{.}$ (ii) $\frac{-6}{.} = \frac{3}{11} = \frac{.}{-55}$

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**52.** Express each of the following rational numbers in the standard form: $\frac{-8}{28}$ (ii) $\frac{-12}{-30}$

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**53.** Express each of the following rational numbers in the standard form: $\frac{14}{-49}$ (ii) $\frac{-16}{-56}$

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**54.** Express each one of the following rational numbers in the standard form: $\frac{-247}{-228}$ (ii) $\frac{299}{-161}$

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**55.** Write each of the following rational numbers in the standard form: $\frac{2}{10}$ (ii) $\frac{-8}{36}$

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**56.** Write each of the following rational numbers in the standard form: $\frac{4}{-16}$ (ii) $\frac{-15}{-35}$

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**57.** Write each of the following rational numbers in the standard form: $\frac{299}{-161}$ (ii) $\frac{-63}{-210}$

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**58.** Write each of the following rational numbers in the standard form: $\frac{68}{-119}$ (ii) $\frac{-195}{275}$

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**59.** Are the rational numbers $\frac{8}{-12}$ $and$ $\frac{-50}{75}$ equal?

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**60.** Are the rational numbers $\frac{-8}{28}$ and $\frac{28}{-49}$ equal?

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**61.** Are the rational numbers $\frac{-4}{6}$ $and$ $\frac{16}{-24}$ equal?

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**62.** Show that the rational numbers $-\frac{15}{35}$ and $\frac{4}{-6}$ are not equal.

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**63.** Which of the following pairs of rational numbers are equal? $\frac{-7}{21}$ $and$ $\frac{3}{-9}$ (ii) $\frac{-8}{-14}$ $and$ $\frac{13}{21}$

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**64.** If $\frac{-5}{7} = \frac{x}{28}$, find the value of x.

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**65.** Fill in the blank: $\frac{-3}{8} = \frac{.}{48}$

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**66.** Which of the following rational numbers are equal? $\frac{-9}{12}$ $and$ $\frac{8}{-12}$ (ii) $\frac{-16}{20}$ $and$ $\frac{20}{-25}$

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**67.** Which of the following rational numbers are equal? $\frac{-7}{21}$ $and$ $\frac{3}{-9}$ (ii) $\frac{-8}{-14}$ $and$ $\frac{13}{21}$

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**68.** If each of the following pairs represents a pair of equivalent rational numbers, find the values of $x$. $\frac{2}{3} and \frac{5}{x}$ (ii) $\frac{-3}{7} an \frac{dx}{4}$

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**69.** If each of the following pairs represents a pair of equivalent rational numbers, find the values of $x$. $\frac{3}{5} an \frac{dx}{-25}$ (ii) $\frac{13}{6} and \frac{-65}{x}$

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**70.** Represent $\frac{5}{3}$ and $\frac{-5}{3}$ on the number line.

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**71.** Represent $\frac{8}{5}$ and $\frac{-8}{5}$ on the number line.

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**72.** Which of the two rational numbers $\frac{3}{5} and \frac{-2}{3}$ is greater?

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**73.** Which of the two rational numbers $\frac{5}{7} and \frac{3}{5}$ is greater?

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**74.** Which of the two rational numbers $\frac{-4}{9} and \frac{5}{-12}$ is greater?

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**75.** Arrange the rational numbers $\frac{-7}{10}, \frac{5}{-8}, \frac{2}{-3}$ in ascending order:

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**76.** Arrange the following rational numbers in descending order: $\frac{4}{9}, \frac{-5}{6}, \frac{-7}{-12}, \frac{11}{-24}$

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**77.** Draw the number line an represent the following rational numbers on it: $\frac{2}{3}$ (ii) $\frac{3}{4}$

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**78.** Draw the number line an represent the following rational numbers on it: $\frac{3}{8}$ (ii) $\frac{-5}{8}$

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**79.** Draw the number line an represent the following rational numbers on it: $\frac{-3}{16}$ (ii) $\frac{-7}{3}$

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**80.** Draw the number line an represent the following rational numbers on it: $\frac{22}{-7}$ (ii) $\frac{-31}{3}$

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**81.** Which of the two rational numbers in each of the following pairs of rational numbers is greater? $\frac{-3}{8}, 0$ (ii) $\frac{5}{2}, 0$

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**82.** Which of the two rational numbers in each of the following pairs of rational numbers is greater? (i) $\frac{-4}{11}, \frac{3}{11}$ (ii) $\frac{-7}{12}, \frac{5}{-8}$

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**83.** Which of the two rational numbers in each of the following pairs of rational numbers is greater? $\frac{4}{-9}, \frac{-3}{-7}$ (ii) $\frac{-5}{8}, \frac{3}{-4}$

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**84.** Which of the two rational numbers in each of the following pairs of rational numbers is greater? $\frac{5}{9}, \frac{-3}{-8}$ (ii) $\frac{5}{-8}, \frac{-7}{12}$

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**85.** Which of the two rational numbers in each of the following pairs of rational numbers is smaller? $\frac{-6}{-13}, \frac{7}{13}$ (ii) $\frac{16}{-5}, 3$

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**86.** Which of the two rational numbers in each of the following pairs of rational numbers is smaller? $\frac{-4}{3}, \frac{8}{-7}$ (ii) $\frac{-12}{5}, -3$

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**87.** Fill in the blanks by the correct symbol out of $>$, $=$, or $<$ : $\frac{-6}{7} \frac{\dot{7}}{13}$ (ii) $\frac{-3}{5} \frac{\ddot{-5}}{6}$

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**88.** Fill in the blanks by the correct symbol out of $>$, $=$, or $<$ : $(i) \frac{-2}{3} .\ldots\ldots \frac{\dot{5}}{-8}$ (ii) $0\ldots\ldots \frac{\dot{-2}}{5}$

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**89.** Arrange the following rational numbers in ascending order: $(i)\ \frac{3}{5}, \frac{-17}{-30}, \frac{8}{-15}, \frac{-7}{10}$ (ii) $\frac{-4}{9}, \frac{5}{-12}, \frac{7}{-18}, \frac{2}{-3}$

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**90.** Arrange the following rational numbers in descending order:

$(i)\ \frac{7}{8}, \frac{64}{16}, \frac{36}{-12}, \frac{5}{-4}, \frac{140}{28}$ (ii) $\frac{-3}{10}, \frac{17}{-30}, \frac{7}{-15}, \frac{-11}{20}$

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**91.** $\frac{44}{-77}$ in standard form is (a) $\frac{4}{-7}$ (b) $-\frac{4}{7}$ (c) $-\frac{44}{77}$ (d) None of these

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**92.** $\frac{-102}{119}$ in standard form is (a) $-\frac{6}{7}$ (b) $\frac{6}{7}$ (c) $-\frac{6}{17}$ (d) None of these

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**93.** A rational number equal to $\frac{-2}{3}$ is (a) $\frac{-10}{25}$ (b) $\frac{10}{-15}$ (c) $\frac{-9}{6}$ (d) None of these

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**94.** If $\frac{-3}{7} = \frac{x}{35}$, then $x =$ (a)15 (b) 21 (c) $-15$ (d) $-21$

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**95.** Which of the following is correct?

$\frac{5}{9} > \frac{-3}{-8}$ (b) $\frac{5}{9} < \frac{-3}{-8}$ $\frac{2}{-3} < \frac{-8}{7}$ (d) $\frac{4}{-3} > \frac{-8}{7}$

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**96.** If the rational numbers $\frac{-2}{3}$ $and$ $\frac{4}{x}$ represent a pair of equivalent rational numbers, then $x =$ (a) 6 (b) $-6$ (c) 3 (d) $-3$

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**97.** What is the additive identity element in the set of whole numbers? (a)0 (b) 1 (c)$-1$ (d) None of these

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**98.** What is the multiplicative identity element in the set of whole number? (a)0 (b) 1 (c)-1 (d) None of these

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**99.** Which of the following is not zero? (a) $0 \times 0$ (b) $\frac{0}{3}$ (c) $\frac{7-7}{3}$ (d) $9+0$

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**100.** The whole number nearest to 457 and divisible by 11 is (a)450 (b) 451 (c)460 (d) 462

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**101.** If $-\frac{3}{8}$ and $\frac{x}{-24}$ are equivalent rational numbers, then $x =$ (a)3 (b) 6 (c)9 (d) 12

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**102.** If $\frac{27}{-45}$ is expressed as a rational number with denominator 5, then the numerator is (a) $3$ (b) $-3$ (c)$6$ (d) $-6$

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**103.** Which of the following pairs of rational numbers are on the opposite sides of the zero

on the number line? (a) $\frac{3}{7}$ $and$ $\frac{5}{12}$ (b) $-\frac{3}{7}$ $and$ $\frac{-5}{12}$ (c) $\frac{3}{7}$ $and$ $\frac{-5}{12}$ (d) None of these

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**104.** The rational number equal to $\frac{2}{-3}$ is $(a)\frac{17}{-18}$ (b) $\frac{-6}{9}$ $(c)\frac{-8}{-12}$ (d) $\frac{3}{-2}$

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**105.** If $-\frac{3}{4}=\frac{6}{x}$, then $x=$ $(a)-8$ (b) 4 $(c)-4$ $(d)8$

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