Ravi Maths Tuition Centre

Rational Numbers

8th Standard

Mathematics

62 x 1 = 62

1) Which of the following is not true?

(a) $\frac{10}{11}+\frac{11}{12}=\frac{11}{12}+\frac{10}{11}$ (b) $\frac{10}{11}\times\frac{11}{12}=\frac{11}{12}\times\frac{10}{11}$ (c) $\frac{10}{11}+\frac{11}{12}=\frac{11}{12}\div\frac{10}{11}$ (d) $\frac{10}{11}\div\frac{11}{12}=\frac{11}{12}\times\frac{10}{11}$

2) Three rational numbers lying between $\frac{-5}{4}$ and $\frac{1}{2}$ are

(a) -1, 0 , $\frac{4}{3}$ (b) $\frac{-3}{4}, \frac{-1}{2}, \frac{1}{4}$ (c) $\frac{-3}{4}, \frac{4}{3}, \frac{1}{4}$ (d) $\frac{-7}{4}, -1, 0$

3) $\frac{x+y}{2}$ is a rational number

(a) between x and y (b) less than x and y both (c) greater than x and y both

(d) less than x but greater than y

4) Which of the following statements is always true?

(a) $\frac{x-y}{2}$ is a rational number between x and y

(b) $\frac{x+y}{2}$ is a rational number between x and y

(c) $\frac{x\times y}{2}$ is a rational number between x and y

(d) $\frac{x\div y}{2}$ is a rational number between x and y

5) The reciprocal of $\frac{-3}{8}\times\frac{-24}{13}$ is

(a) $\frac{9}{13}$ (b) $\frac{-9}{13}$ (c) $\frac{-13}{9}$ (d) $\frac{13}{9}$

6) The reciprocal of 0 is

(a) -1 (b) 1 (c) 0 (d) not defined

7) Zero (0) is

(a) the identity for addition of rational numbers

(b) the identity for subtraction of rational numbers

(c) the identity for multiplication of rational numbers

(d) the identity for division of rational numbers.

8) One (1) is

(a) the identity for addition of rational numbers.

(b) the identity for subtraction of rational numbers.

(c) the identity for multiplication of rational numbers

(d) theidenttty for division of rational numbers.

9) Multiplicative inverse of a negative rational number is

(a) 0 (b) -1 (c) a negative rational number (d) a positive rational number

10) To get the product $\frac{-4}{5}$ we should multiply $\frac{10}{11}$ by

(a) $\frac{14}{5}$ (b) $\frac{-4}{25}$ (c) $\frac{-22}{25}$ (d) $\frac{-9}{5}$

11) The numerical expression $\frac{3}{8} + \frac{(-5)}{7} = \frac{-19}{56}$ shows that

(a) rational numbers are closed under addition

(b) rational numbers are not closed under addition

(c) rational numbers are closed under multiplication

(d) addition of rational numbers is not commutative.

12) Which of the following is not true?

(a) rational numbers are closed under addition

(b) rational numbers are closed under subtraction.

(c) rational numbers are closed under multiplication

(d) rational numbers are closed under division

13) What should be added to $\frac{-3}{4}$ to get -1?

(a) $\frac{1}{4}$ (b) $\frac{-1}{4}$ (c) 1 (d) $\frac{-3}{4}$

14) What should be subtracted from $\frac{-3}{4}$ to get - 1?

(a) $\frac{1}{4}$ (b) $-\frac{1}{4}$ (c) 1 (d) $-\frac{3}{4}$

15) Which of the following is the identity element?

(a) 1 (b) -1 (c) 0 (d) None of these

16) Which of the following is the multiplicative identity for rational numbers?

(a) 1 (b) -1 (c) 0 (d) None of these

17) Which of the following is neither positive nor a negative rational number?

(a) 1 (b) 0 (c) Such a rational number does not exist (d) None of the above

18) Which of the following rational numbers lies between 0 and -1 ?

(a) 0 (b) -1 (c) $-\frac{2}{3}$ (d) $\frac{2}{3}$

19) Which of the following is the reciprocal of p?

(a) -p (b) p (c) $\frac{1}{p}$ (d) $\frac{-1}{p}$

20) Which of the following is the product of $\frac{7}{8}$ and $\frac{-2}{21}$?

(a) $\frac{-1}{12}$ (b) $\frac{1}{12}$ (c) $\frac{-16}{63}$ (d) $\frac{-147}{16}$

21) Which of the following is the product of $\left(\frac{-7}{8}\right)$ and $\frac{2}{21}$?

(a) $-\frac{1}{12}$ (b) 12 (c) $\frac{-63}{16}$ (d) $\frac{-16}{147}$

22) Which of the following is the reciprocal of the reciprocal of a rational number?

(a) -1 (b) 1 (c) 0 (d) The rational number itself

23) The sum of $-\frac{1}{9}$ and $-\frac{1}{9}$ is-

(a) 0 (b) 1 (c) $\frac{2}{9}$ (d) $\frac{-2}{9}$

24) The product of $\frac{1}{5}$ and $-\frac{1}{5}$ is -

(a) 0 (b) 1 (c) $\frac{1}{25}$ (d) $\frac{-1}{25}$

25) The multiplicative inverse of $\frac{1}{6}$ is -

(a) -6 (b) 6 (c) $-\frac{1}{6}$ (d) 1

26) The rational number equivalent to $\frac{9}{-81}$ is -

(a) $\frac{18}{162}$ (b) $\frac{-81}{162}$ (c) $-\frac{1}{9}$ (d) $\frac{1}{9}$

27) 0 reduced by $\frac{1}{2}$ is -

(a) $\frac{1}{2}$ (b) $-\frac{1}{2}$ (c) 2 (d) -2

28) Which of the following statements is false?

(a) Natural numbers are closed under addition

(b) Whole numbers are closed under addition (c) Integers are closed under addition

(d) Rational numbers are not closed under addition.

29) Which of the following statements is false?

(a) Natural numbers are closed under subtraction

(b) Whole numbers are not closed under subtraction

(c) Integers are closed under subtraction

(d) Rational numbers are closed under subtraction.

30) Which of the following statements is true?

(a) Natural numbers are closed under multiplication

(b) Whole numbers are not closed under multiplication

(c) Integers are not closed under multiplication

(d) Rational numbers are not closed under multiplication.

31) Which of the following statements is true?

(a) Natural numbers are closed under division

(b) Whole numbers are not closed under division

(c) Integers are closed under division (d) Rational numbers are closed under division.

32) Which of the following statements is false?

(a) Natural numbers are commutative for addition

(b) Whole numbers are commutative for addition

(c) Integers are not commutative for addition

(d) Rational numbers are commutative for addition.

33) Which of the following statements is true?

(a) Natural numbers are commutative for subtraction

(b) Whole numbers are commutative for subtraction

(c) Integers are commutative for subtraction

(d) Rational numbers are not commutative for subtraction.

34) Which of the following statements is false?

(a) Natural numbers are commutative for multiplication

(b) Whole numbers are commutative for multiplication

(c) Integers are not commutative for multiplication

(d) Rational numbers are commutative for multiplication.

35) Which of the following statements is true?

(a) Natural numbers are commutative for division

(b) Whole numbers are not commutative for division

(c) Integers are commutative for division

(d) Rational numbers are commutative for division.

36) Which of the following statements is true?

(a) Natural numbers are associative for addition

(b) Whole numbers are not associative for addition

(c) Integers are not associative for addition

(d) Rational numbers are not associative for addition.

37) Which of the following statements is true?

(a) Natural numbers are associative for subtraction

(b) Whole numbers are not associative for subtraction

(c) Integers are associative for subtraction

(d) Rational numbers are associative for subtraction.

38) Which of the following statements is true?

(a) Natural numbers are not associative for multiplication

(b) Whole numbers are not associative for multiplication

(c) Integers are associative for multiplication

(d) Rational numbers are not associative for multiplication.

39) Which of the following statements is true?

(a) Natural numbers are associative for division

(b) Whole numbers are associative for division (c) Integers are associative for division

(d) Rational numbers are not associative for division

40) 0 is not

(a) a natural number (b) a whole number (c) an integer (d) a rational number.

41) $\frac{1}{2}$ is

(a) a natural number (b) a whole number (c) an integer (d) a rational number.

42) a + b = b + a is called

(a) commutative law of addition (b) associative law of addition

(c) distributive law of addition (d) none of these.

43) $a \times b = b \times a$ is called

(a) commutative law for addition (b) commutative law for multiplication

(c) associative law for addition (d) associative law for multiplication.

44) (a + b) + c = a + (b + c) is called

(a) commutative law for multiplication (b) commutative law for addition

(c) associative law for addition (d) associative law for multiplication.

45) $a \times (b \times c) = (a \times b) \times c$ is called

(a) associative law for addition (b) associative law for multiplication

(c) commutative law for addition (d) commutative law for multiplication.

46) (b + c) = ab + ac is called

(a) commutative law (b) associative law (c) distributive law (d) none of these.

47) The additive identity for rational numbers is

(a) 1 (b) -1 (c) 0 (d) none of these.

48) The multiplicative identity for rational numbers is

(a) -1 (b) 1 (c) 0 (d) none of these.

49) The additive inverse of $\frac{2}{3}$ is

(a) $-\frac{2}{3}$ (b) $\frac{3}{2}$ (c) $-\frac{3}{2}$ (d) 1

50) The additive inverse of $-\frac{3}{4}$ is

(a) $-\frac{3}{4}$ (b) 1 (c) 0 (d) $\frac{3}{4}$

51) The multiplicative inverse of $\frac{1}{2}$ is

(a) 1 (b) -1 (c) 2 (d) 0.

52) The multiplicative inverse of $-\frac{2}{5}$ is

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

53) The multiplicative inverse of 1 is

(a) 0 (b) -1 (c) 1 (d) none of these.

54) The multiplicative inverse of - 1 is

(a) 0 (b) -1 (c) 1 (d) none of these.

55) How many rational numbers are there between any two given rational numbers?

(a) Only one (b) Only two (c) Countless (d) Nothing can be said.

56) The negative of 2 is

(a) 2 (b) $\frac{1}{2}$ (c) -2 (d) $-\frac{1}{2}$

57) The negative of - 2 is

(a) -2 (b) 2 (c) $-\frac{1}{2}$ (d) $\frac{1}{2}$.

58) The rational number that does not have a reciprocal is

(a) 0 (b) -1 (c) 1 (d) $\frac{1}{2}$.

59) The rational number which is equal to its negative is

(a) 0 (b) -1 (c) 1 (d) $\frac{1}{2}$.

60) The reciprocal of $\frac{1}{x}(x \neq 0)$ is

(a) x (b) $\frac{1}{x}$ (c) 1 (d) 0.

61) The reciprocal of a positive rational number is

(a) a positive rational number (b) a negative rational number (c) 0 (d) 1.

62) The reciprocal of a negative rational number is

(a) a positive rational number (b) a negative rational number (c) 0 (d) -1.

34 x 1 = 34

63) Zero has _____reciprocal.

64) The numbers _____and _____ are their own reciprocals

65) The reciprocal of -5 is _____

66) Reciprocal of $\frac{1}{x}$, where x $\neq$ 0 is_____

67) The product of two rational numbers is always a _____

68) The reciprocal of a positive rational number is _____

69)

Numbers	**Closed under**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Rational numbers	Yes	Yes	_____	No

70)

Numbers	**Closed under**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Integers	_____	Yes	_____	No

71)

Numbers	**Closed under**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Whole numbers	_____	_____	Yes	_____

72)

Numbers	**Closed under**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Natural numbers	_____	no	_____	_____

73)

Numbers	**Commutative for**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Rational numbers	Yes	_____	_____	_____

74)

Numbers	**Commutative for**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Integers	_____	No	_____	_____

75)

Numbers	**Commutative for**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Whole numbers	_____	_____	Yes	_____

76)

Numbers	**Commutative for**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Natural numbers	_____	_____	_____	No

77)

Numbers	**Associative for**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Rational numbers	_____	_____	_____	No

78)

Numbers	**Associative for**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Integers	_____	_____	yes	_____

79)

Numbers	**Associative for**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Whole numbers	yes	_____	_____	_____

80)

Numbers	**Associative for**			
	Addition	**Subtraction**	**Multiplication**	**Division**
Natural numbers	_____	No	_____	_____

81) The equivalent rational number of $\frac{17}{9}$, whose numerator is 136, is_____

82) $(534x\ 991)^{-1} = (534)^{-1}$ x _____

83) The rational number 9.99 in the form of $\frac{p}{q}$ is _____

84) $\frac{1}{15} \times [\frac{27}{31} + \frac{32}{37}] = [\frac{1}{15} \times \frac{27}{31}] +$ _____

85) The rational numbers $\frac{4}{17} and \frac{-4}{17}$ are on the _____sides of zero on the number line.

86) $-\frac{4}{7}$ is_____than $-\frac{4}{5}$

87) There are _____rational numbers between any two rational numbers.

88) The additive inverse of a positive rational number is always a _____rational number.

89) The reciprocal of $\frac{-15}{17}$ is _____

90) Rational number $\frac{-3}{5}$ lies between consecutive integers -1 and _____

91) The product of a number and its reciprocal is _____.

92) The rational number _____has no reciprocal.

93) The reciprocal of the reciprocal of a number is _____.

94) The rational number _____is neither positive nor negative.

95) _____is the only rational number which is equal to its additive inverse.

96) The multiplicative inverse of 1/6 is _____.

21 x 1 = 21

97) All the natural numbers are whole numbers.

(a) False (b) True

98) All the whole numbers are integers

(a) False (b) True

99) All the integers are rational numbers.

(a) False (b) True

100) All the fractions are not rational numbers but all the rational numbers are fractions

(a) True (b) False

101) Zero is a rational number

(a) False (b) True

102) The product of a non-zero rational number and its reciprocal is 0.

(a) True (b) False

103) Every rational number has a reciprocal

(a) True (b) False

104) $\frac{-4}{5}$ is greater than $\frac{-5}{4}$

(a) False (b) True

105) $\frac{2}{3} - \frac{5}{4} = \frac{5}{4} - \frac{2}{3}$

(a) True (b) False

106) If $\frac{a}{b}$ is a rational number, then b can be any whole number

(a) True (b) False

107) $\frac{-5}{10}$ lies between $\frac{-1}{2}$ and 1

(a) True (b) False

108) If P $\neq$ 0, the multiplicative inverse of $\frac{p}{q} is \frac{q}{p}$

(a) False (b) True

109) The negative of the negative of any rational number is the number itself

(a) False (b) True

110) The negative of 0 does not exist.

(a) False (b) True

111) For any rational number a and b, a - b = b - a.

(a) True (b) False

112) For every rational numbers x, y and z, $x + (y \times z) = (x + y) \times (x + z)$

(a) True (b) False

113) 1 is the only number, which is own reciprocal.

(a) True (b) False

114) -1 is not the reciprocal of any rational number.

(a) True (b) False

115) If x and y are negative rational numbers, then so is (x + y).

(a) False (b) True

116) The reciprocal of x^{-1} is $\frac{1}{x}$

(a) True (b) False

117) Zero is the smallest rational number.

(a) True (b) False

20 x 1 = 20

118) a(b+ c) = ab + ac is called

119) a x (bx c) = (a x b)x c is called

120) a+b=b+a is called

121) axb=bxa is called

122) (a + b)+ c= a + (b+ c) is called

123) Natural numbers are not closed under

124) Rational numbers are not associative for

125) Multiplicative inverse of-13 is

126) Additive inverse of $-\frac{1}{13}$ is

127) The rational number having no reciprocal is

128) The product of a rational number (other than zero) and its reciprocal is:

129) The reciprocal of (-1) is:

130) The product of (-3) and the negative reciprocal of $1\frac{1}{2}$, is:

131) On a number line the rational number equidistant from a and -1 is:

132) a+b = b+a

133) 3x - 8 / 2x

(1) 8

(2) 8

(3) Subtraction

(4) Commutative property for addition

(5) $-\frac{1}{2}$

(6) Distributive property for addition

(7) $-\frac{1}{13}$

(8) b x h

(9) 0

(10) Division

(11) Commutative property for multiplication

(12) Associative property for multiplication

(13) $\frac{1}{13}$

(14) -1

(15) 180

(16) commutative property

134) Linear Pair

135) In a rectangle diagonals are

136) Parallelogram

137) 3x- 8 / 2x = 1

(17) equal

(18) Commutative property for addition

(19) 2

(20) 1

34 x 1 = 34

138) Write the additive inverse of the following: $\frac{-7}{19}$

139) Write the additive inverse of the following: $\frac{-21}{112}$

140) Which of a or 1 is the multiplicative identity for rational numbers?

141) Which of a or 1 is the additive identity for rational numbers?

142) Is 0 a rational number?

143) How many rational numbers can exist between 0 and -1?

144) Is a rational number the quotient of two integers such that the denominator is a nonzero integer?

145) Is there any rational number which when multiplied by 0 gives 1?

146) Which rational numbers are their own reciprocals?

147) Is there a rational number that is equal to its negative? If yes, write it.

148) What is the reciprocal of the reciprocal of $\frac{1}{2}$?

149) A rational number which has no reciprocal

150) A rational number whose product with a given rational number is equal to the given rational number.

151) A rational number which is equal to its reciprocal.

152) Find $\frac{5}{22} + \frac{3}{7} + \left(\frac{-8}{21}\right) + \left(\frac{-6}{11}\right)$

153) Find $\left(\frac{-14}{9}\right) \times \frac{3}{5} \times \left(\frac{-4}{7}\right) \times \frac{15}{16}$

154) Write the reciprocal of - 1 x $\frac{5}{8}$

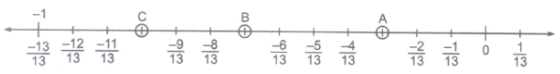
155) Find a rational number between $\frac{1}{2}$ and $\frac{2}{3}$

156) Find three rational numbers between $\frac{3}{7}$ and $\frac{2}{3}$

157) Find five rational numbers between $\frac{2}{5}$ and $\frac{1}{4}$

158) Find ten rational numbers between $\left(-\frac{2}{3}\right)$ and $\frac{2}{3}$

159) Write the rational number represented by the points A, B, and C on the following number line:



160) What is the additive inverse of ? $\frac{-1}{13}$

161) What is the additive inverse of ? $\frac{1}{5}$

162) What is the additive inverse of ? $\frac{1}{-2}$

163) What is the multiplicative inverse of ? 51

164) What is the multiplicative inverse of? $\frac{-1}{3}$

165) What is the multiplicative inverse of ? $\frac{4}{-7}$

166) What is the product of $\frac{-6}{13}$ and $\frac{7}{16}$?

167) Find four rational numbers between -2 and 0.

168) Find two rational numbers between $\frac{1}{2}$ and $\frac{1}{5}$

169) Find five rational numbers between $\frac{1}{3}$ and $\frac{1}{5}$

170) Find three rational numbers between (-2) and 5.

171) The product of two rational numbers is $\left(\frac{-28}{81}\right)$. If one of them is $\frac{-2}{3}$, then find the other

172) Using appropriate properties, find $\frac{2}{5} \times (\frac{-3}{7}) - \frac{1}{6} \times \frac{3}{2} + \frac{1}{14} \times \frac{2}{5}$

173) Write the additive inverse of the following $\frac{2}{8}$

174) Write the additive inverse of the following $\frac{-5}{9}$

175) Write the additive inverse of the following $\frac{-6}{-5}$

176) Write the additive inverse of the following $\frac{2}{-9}$

177) Write the additive inverse of the following $\frac{19}{-6}$

178) Verify that -(-x) = x, for x = $\frac{11}{15}$

179) Verify that -(-x) = x,for x = $\frac{-13}{17}$

180) Find the multiplicative inverse of the following -13

181) Find the multiplicative inverse of the following $\frac{-13}{19}$

182) Find the multiplicative inverse of the following $\frac{1}{5}$

183) Find the multiplicative inverse of the following $\frac{-5}{8} \times \frac{-3}{7}$

184) Find the multiplicative inverse of the following $-1 \times \frac{-2}{5}$

185) Find the multiplicative inverse of the following -1

186) Name the property under multiplication used in each of the following:
$\frac{-4}{5} \times 1 = 1 \times \frac{-4}{5} = -\frac{4}{5}$

187) Name the property under multiplication used in each of the following:
$\frac{13}{17} \times \frac{-2}{7} = \frac{-2}{7} \times \frac{-13}{17}$

188) Name the property under multiplication used in each of the following:
$\frac{-19}{29} \times \frac{29}{-19} = 1$

189) Multiply $\frac{6}{13}$ by the reciprocal of $\frac{-7}{16}$

190) Tell what property allows you to compute $\frac{1}{3} \times (6 \times \frac{4}{3}) as (\frac{1}{3} \times 6) \times \frac{4}{3}$

191) Is $\frac{8}{9}$ the multiplicative inverse of $-1\frac{1}{8}$ Why or why not?

192) Is 0.3 the multiplicative inverse of $3\frac{1}{3}$? Why or why not?

193) Write the rational number that does not have a reciprocal

194) Write the rational numbers that are equal to their reciprocals.

195) Write the rational number that is equal to its negative.

196) Write five rational numbers which are smaller than 2.

197) Write five rational numbers greater than -2.

198) Find ten rational numbers between $\frac{3}{5} and \frac{3}{4}$

199) Find $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \left(\frac{-14}{9}\right)$

200) Verify that – (– x) is the same as x for $x = \frac{13}{17}$

201) Verify that – (– x) is the same as x for $x = \frac{-21}{31}$

202) Write any 3 rational numbers between –2 and 0.

203) Find any ten rational numbers between $\frac{-5}{6}$ and $\frac{5}{8}$

204) Find a rational number between $\frac{1}{4}$ and $\frac{1}{2}$

205) Find three rational numbers between $\frac{1}{4}$ and $\frac{1}{2}$.

206) Is the rational numbers closed under multiplication, Justify?

207) Simplify : $\frac{32}{5} + \frac{23}{11} \times \frac{22}{15}$

208) Simplify : $\frac{7}{8} + \frac{1}{16} - \frac{1}{12}$

209) If 16 shirts of equal size can be made out of 24 m of cloth, then how much cloth is needed for making one shirt?

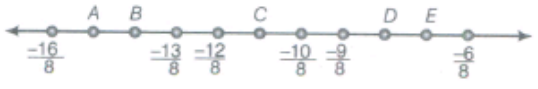
210) Write any three rational numbers between -3 and 0.

211) Find a rational number between $\frac{2}{3} and \frac{3}{4}$

212) Write any five rational numbers between $-\frac{5}{6} and \frac{7}{8}$

213) Write any two pair of rational numbers, which are on the opposite sides of zero on the number line

214) Write the rational number for each point labelled with a letter



215) Find the multiplicative inverse of $\frac{-11}{13}$

216) Find a rational number between 10 and 11.

217) Represent $\frac{-7}{4}$ on the number line

218) 'Rational numbers are commutative under addition but not commutative under subtraction.' Justify the statement with an example.

219) Give an example to show that subtraction is not associative for rational numbers.

220) Find the additive inverse of $\frac{-6}{-7}$

221) Find the additive inverse of $\frac{17}{-3}$

222) Write the multiplicative inverse of 312.

223) Write the equivalent rational number of $\frac{-13}{17}$ whose denominator is 289.

224) How many rational numbers are there $-\frac{3}{2}$ between and 0 with denominator as 1?

225) If $\frac{a}{b}$ is the additive inverse of $\frac{c}{d}$ then find the value of $\frac{a}{b} + \frac{c}{d}$

226) Find the sum of additive inverse and multiplicative inverse of $\frac{7}{3}$

227) Find the product of additive inverse and multiplicative Inverse of $\frac{-11}{13}$

228) A farmer has a field of area 49 $\frac{4}{5}$ hec. He wants to divide it equally among his one son and two daughters. Find the area of each one's share. (hec means hectare; 1 hectare = $10000m^2$)

229) Name the property used in each of the following:

$(-\frac{7}{11}) \times (\frac{-3}{5}) = (\frac{-3}{5}) \times (\frac{-7}{11})$

230) Name the property used in each of the following:

$-\frac{2}{3} \times [\frac{3}{5} + (\frac{-1}{2})] = [(\frac{-2}{3}) \times \frac{3}{4}] + [(\frac{-2}{3}) \times (\frac{-1}{2})]$

231) Name the property used in each of the following:

$\frac{1}{3} + [\frac{4}{9} + (\frac{-4}{3})] = [\frac{1}{3} + \frac{4}{9}] + (\frac{-4}{3})$

232) Name the property used in each of the following:

$(\frac{-2}{7}) + 0 = 0 + (\frac{-2}{7}) = -\frac{2}{7}$

233) Name the property used in each of the following:

$\frac{3}{8} \times 1 = 1 \times \frac{3}{8} = \frac{3}{8}$

234) Find a rational number between -7 and -8.

235) Give an example to show that rational numbers are not associative under subtraction.

236) Write any five rational numbers between $\frac{-14}{15}$ ***and*** $\frac{1}{5}$

237) Write four rational numbers between 0 and -2

238) Find any seven rational numbers between $\frac{5}{8}$ and $\frac{-5}{6}$

239) Multiply the reciprocal of $\frac{7}{8}$ by the reciprocal of $\frac{-2}{21}$

240) The product of two rational numbers is $\frac{-28}{75}$ if one of the numbers is $\frac{14}{25}$ find the other

241) 4 + 7 =_____ Is it a whole number?

242) 3×7 = _____. Is it a whole number?

243) Is -7 + (- 5) an integer?

244) Is 8 + 5 an integer?

245) Is 5 - 7 an integer?

246) Is 8 - (- 6) an integer?

247) $-\frac{3}{8} + \frac{(-4)}{5} = \frac{-15+(-32)}{40} =$ _____ Is it a rational number?

248) $\frac{4}{7} + \frac{6}{11} =$ _____. Is it a rational number?

249) $\frac{5}{8} - \frac{4}{5} = \frac{25-32}{40} =$ _____.
Is it a rational number?

250) $\frac{3}{7} - (-\frac{8}{5}) =$ _____.
Is it a rational number?

251) $-\frac{4}{5} \times -\frac{6}{11} =$ _____ . Is it a rational number?

252) $\frac{2}{7} \div \frac{5}{3} =$ _____. Is it a rational number?

253) $\frac{-3}{8} \div \frac{-2}{9}$= _____. Is it a rational number?

254) $\frac{-6}{5} + (\frac{-8}{3}) =$ _____ and $\frac{-8}{3} + (\frac{-6}{5}) =$ _____
Is $\frac{-6}{5} + (\frac{-8}{3}) = \frac{-8}{3} + (\frac{-6}{5})$?

255) Is $-\frac{3}{8} + \frac{1}{7} = \frac{1}{7} + (\frac{-3}{8})$?

256) Is $\frac{2}{3} - \frac{5}{4} = \frac{5}{4} - \frac{2}{3}$?

257) Is $\frac{1}{2} - \frac{3}{5} = \frac{3}{5} - \frac{1}{2}$?

258) Is $\frac{-8}{9} \times (\frac{-4}{7}) = \frac{-4}{7} \times (\frac{-8}{9})$?

259) Is $\frac{-5}{4} \div \frac{3}{7} = \frac{3}{7} \div (\frac{-5}{4})$?

260) Is (-2) + [3 + (-4)] = [(-2) + 3] + (- 4)?

261) Is (-6) + [(-4) + (-5)] = [(-6) + (-4) + (-5)?

262) Is 5 - (7 - 3) = (5 - 7) - 3 ?

263) Is $5 \times [(-7) \times (-8)] = [5 \times (-7)] \times (-8)$?

264) Is $(-4) \times [(-8) \times (-5)] = [(-4) \times (-8)] \times (-5)$?

265) Is $[(10) \div 2] \div (-5) = (-10) \div [2 \div (-5)]$?

266) Is $\frac{-2}{3} - [\frac{-4}{5} - \frac{1}{2}] = [\frac{-2}{3} - (\frac{-4}{5})] - \frac{1}{2}$? Check for yourself.

267) $(\frac{-7}{3} \times \frac{5}{4}) \times \frac{2}{9}$= _____

268) Is $\frac{2}{3} \times (\frac{-6}{7} \times \frac{4}{5}) = (\frac{2}{3} \times \frac{-6}{7}) \times \frac{4}{5}$?

269) Do you think the properties of commutativity and associativity made the calculations easier?

270) -5 + 0 = _____ + _____ = - 5

271) $\frac{-2}{7}$ + _____ = 0+$(\frac{-2}{7}) = \frac{-2}{7}$

272) Do a few more such additions. What do you observe ?

273) $\frac{-2}{7} \times 1 =$ _____ × _____ =$\frac{-2}{7}$

274) $\frac{3}{8} \times$ _____ =$1 \times \frac{3}{8} = \frac{3}{8}$.

275) What do you find ?

276) Check this for a few more rational numbers.

277) Is 1 the multiplicative identity for integers ? For whole numbers ?

278) $-\frac{8}{9}+$ _____ = _____$+(-\frac{8}{9})=0$.

279) _____ $+(-\frac{11}{7})=(-\frac{11}{7})+$ _____ $=0$.

280) Can you say what is the reciprocal of 0 (zero) ?

281) How many integers are there between - 1and 1?

282) How many integers are there between - 9 and -10 ?

81 x 3 = 243

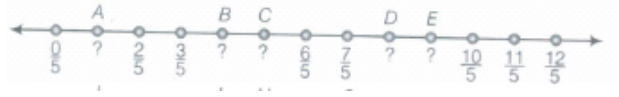
283) If a property holds for rational number, will it also hold for integers? For whole numbers? Which will? Which will not?

284) Find using distributivity. $\{\frac{7}{5}\times(\frac{-3}{12})\}+\{\frac{7}{16}\times\frac{5}{12}\}$

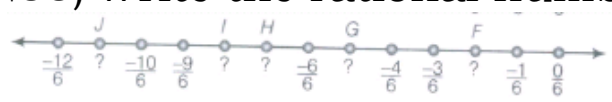
285) Find using distributivity. $\{\frac{9}{16}\times\frac{4}{12}\}+\{\frac{9}{16}\times\frac{-3}{9}\}$

286) Using appropriate properties, find $\frac{-2}{3}\times\frac{3}{5}+\frac{5}{2}-\frac{3}{5}\times\frac{1}{6}$

287) Write the rational number for each point labelled with a letter



288) Write the rational number for each point labelled with a letter



289) Represent these numbers on the number line. $\frac{7}{4}$

290) Represent these numbers on the number line. $\frac{-5}{6}$

291) Represent $\frac{-2}{11}, \frac{-5}{11}, \frac{-9}{11}$ on the number line.

292) Find ten rational numbers between $\frac{-2}{5} and \frac{1}{2}$

293) Find five rational numbers between $\frac{2}{3}$ *and* $\frac{4}{5}$

294) Find five rational numbers between $\frac{-3}{2}$ *and* $\frac{5}{3}$

295) Find five rational numbers between $\frac{1}{4} and \frac{1}{2}$

296) Fill in the blanks in the following table:

Number	**Closed Under**			
	Addition	**Subtraction**	**Multuplication**	**Division**
Rational numbers	Yes	Yes	...	No
Integers	...	Yes	...	No
Whole numbers	...	...	Yes	...
Natural numbers	...	No	...	...

297) Complete the following table:

Numbers	**Commutative for**			
	Addition	**Subtraction**	**Multuplication**	**Division**
Rational numbers	Yes	....	...	...
Integers	...	No	...	...
Whole numbers	...	...	Yes	...
Natural numbers	...	...	...	No

298) Complete the following table:

Numbers	**Associative for**			
	Addition	**Subtraction**	**Multuplication**	**Division**
Rational numbers	...	....	...	No
Integers	...	....	Yes	...
Whole numbers	Yes	...	...	...
Natural numbers	...	No	...	...

299) Find $\frac{2}{5} \times \left(\frac{-3}{7}\right) - \frac{1}{14} - \frac{3}{7} \times \frac{3}{5}$

300) Using appropriate properties, find $\frac{2}{3} \times \frac{-5}{7} + \frac{7}{3} + \frac{2}{3} \times \frac{-2}{7}$

301) Solve $-5 + \frac{7}{10} + \frac{3}{7} + (-3) + \frac{5}{14} + \frac{-4}{5}$

302) Compute the sum of multiplicative inverse and additive Inverse of $-\frac{2}{3}$

303) Multiply the multiplicative inverse of -2 with its reciprocal.

304) Find the additive and multiplicative inverse of $-2\frac{3}{5}$

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

306) Write two rational numbers between 1 and 2

307) Find a rational number between $-\frac{3}{5} and \frac{1}{4}$

308) Write any five non-negative rational numbers less than 1

309) Write three rational numbers, which are greater than - 3.

310) Find three rational numbers between $\frac{1}{2} and \frac{1}{3}$ by mean method.

311) Find the product of $\frac{-6}{17}$ and reciprocal of $\frac{-4}{13}$

312) Solve, $\frac{-3}{13} + \frac{15}{17} \times \frac{-3}{13} + \frac{17}{15}$

313) The product of two rational numbers is $\frac{-128}{75}$ If one of the numbers is $\frac{64}{3}$ find the other rational number.

314) Represent $\frac{1}{3}, \frac{-1}{3} and -\frac{7}{9}$ on number line.

315) verify that $\frac{5}{6} \times (-\frac{4}{5} + \frac{-6}{10}) = [\frac{5}{6} \times (\frac{-4}{5})] + [\frac{5}{6} \times (\frac{-6}{10})]$

316) Write five rational numbers which are greater than -3

317) Write five rational numbers which are greater than -7

318) Write five rational numbers which are less than -7

319) Write five rational numbers which are less than -4

320) Write five rational numbers between the multiplicative inverse of $5\frac{1}{5}$ and additive inverse of 1.

321) Find three rational numbers between $\frac{1}{2}$ *and* $\frac{1}{3}$ by mean method.

322) Find the product of $\frac{-6}{17}$ and reciprocal of $\frac{-4}{13}$

323) Solve, $\frac{-3}{13}+\frac{15}{17}\times\frac{-3}{13}+\frac{17}{15}$

324) The product of two rational numbers is $\frac{-128}{75}$ If one of the numbers is $\frac{64}{3}$ find the other rational number.

325) Represent $\frac{1}{3}, \frac{-1}{3}$ *and* $-\frac{7}{9}$ on number line.

326) verify that $\frac{5}{6}\times(-\frac{4}{5}+\frac{-6}{10})=[\frac{5}{6}\times(\frac{-4}{5})]+[\frac{5}{6}\times(\frac{-6}{10})]$

327) Write five rational numbers which are greater than 3

328) Write five rational numbers which are greater than -7

329) Write five rational numbers which are less than -7

330) Write five rational numbers which are less than -4

331) Write five rational numbers between the multiplicative inverse of $5\frac{1}{5}$ and additive inverse of 1.

332) By what numbers should we multiply $\frac{-15}{20}$,that the product may be $\frac{15}{7}$?

333) A train travels $\frac{1445}{2}$ km in $\frac{17}{2}h$ Find the speed of the train in km/h.

334) The cost of $\frac{19}{4}$m of wire is Rs $\frac{171}{2}$, then find the cost of one metre of the wire.

335) $\frac{4}{7}$ of all the money in Abdul's bank account is Rs.88000. How much money does Abdul have in his bank account?

336) A $117\frac{1}{3}$m long rope is cut into equal pieces measuring $7\frac{1}{3}$m each. How many such small pieces are these?

337) $\frac{1}{6}$ of the class students are above average, $\frac{1}{4}$ are average and rest are below average. If there are 48 students in all, how many students are below average in the class?

338) Solve $\frac{4}{7}+(-\frac{4}{9})+\frac{3}{7}+(-\frac{13}{9})$

339) Verify the property x X y = y X x of rational numbers by using $x=\frac{-5}{7}$ *and* $y=\frac{14}{15}$

340) Verify the property x x y = y x x of rational numbers by using $x=\frac{2}{3}$ *and* $y=\frac{9}{4}$

341) Simplify $\frac{3}{7}\times\frac{28}{15}\div\frac{14}{5}$

342) Simplify $\frac{3}{7}\times(\frac{-2}{21})\times(\frac{-5}{6})$

343) Subtract the sum of $\frac{-7}{8} and \frac{5}{16}$ from the sum of $\frac{3}{5} and \frac{2}{9}$

344) Solve the followings:

$(\frac{-3}{7} \div \frac{9}{14}) \div (\frac{-5}{2})$

345) Solve the followings:

$\frac{18}{19} \div (\frac{-37}{19} \div \frac{74}{57})$

346) Find three rational numbers between 2 and 3 by using mean method.

347) Find the sum of the reciprocal of $(\frac{-17}{19})$ to the negative of $(-\frac{190}{17})$

348) On a winter day, the temperature at a place in Jammu and Kashmir was -16° C. Convert it in degree Fahrenheit (°F) by using the formula $\frac{c}{5} = \frac{F-32}{9}$

349) From a rope which is 80 m long, pieces of equal size are cut. If the length of one piece is $\frac{20}{3}$ m then find the number of such pieces

350) Let O, P and Z represent the numbers 0, 3 and -5, respectively on the number line. Points Q, Rand S are between O and P such that OQ = QR = RS = SP. What are the rational numbers represented by the points Q, Rand S? Next choose a point T between Z and O, so that ZT = TO. Which rational number does T represent?

351) Evaluate $\frac{5}{7} + \frac{-2}{3} + \frac{-3}{7} + \frac{5}{3}$

352) Let us represent $\left(\frac{2}{-7}\right)$ on the number line. In this case we divide the distance between 0 and (-1) into 7 equal parts and then consider 2 parts out of them

353) Find three rational numbers between -3 and - 4

354) Check it for a few more pairs of rational numbers.

355) Try this for some more pears of rational numbers.

356) Take some more pairs of rational numbers and check that their product is again a rational number.

357) Fill in the following table and check the commutativity of different operations for integers:

OPERATION	**NUMBERS**	**REMARKS**
Addition	_____	Addition is commutative.
Subtraction	Is 5- (-3)= -3 - 5?	Subtraction is not commutative.
Multiplication	_____	Multiplication is commutative.
Division	_____	Division is not commutative.

358) Check for some more such products.

359) Find $\frac{-1}{2} + [\frac{3}{7} + (\frac{-4}{3})]$ and $[\frac{-1}{2} + \frac{3}{7}] + (\frac{-4}{3})$. Are the two sums equal ?

360) Take some more rational numbers, add them as above and see if the two sums are equal.

361) Take some more rational numbers and check for yourself.

362) See if $\frac{1}{2} \div [\frac{-1}{3} \div \frac{2}{5}] = [\frac{1}{2} \div (\frac{-1}{3})] \div \frac{2}{5}$ Is L.H.S. = R.H.S. ? Check for yourself.

363) $(-\frac{2}{3}) + \frac{2}{3} = 0$.How?

47 x 5 = 235

364) Find $\frac{3}{7} + \left(\frac{-6}{11}\right) + \left(\frac{-8}{21}\right) + \left(\frac{5}{22}\right)$

365) Find the value of $\frac{x}{y}+xy$, using appropriate property and name it $x=\frac{1}{3}, y=\frac{2}{5}$

366) Find the value of $\frac{x}{y}+xy$, using appropriate property and name it $x=\frac{3}{4}\ y=2$

367) Using and associativity of addition of rational numbers, express the following as a rational number.

$\frac{5}{2}+\frac{-3}{7}+\frac{1}{2}+\frac{4}{7}$

368) Rearrange suitably and find the sum in each of the following:

$\frac{2}{3}+\frac{9}{2}+\frac{7}{4}+\frac{-6}{3}+\frac{-3}{2}$

369) Rearrange suitably and find the sum in each of the following:

$\frac{-5}{7}+\frac{5}{6}+\frac{1}{7}+3+\frac{-13}{6}$

370) Find five rational numbers between $-\frac{1}{2} and \frac{2}{3}$

371) Represent the following rational numbers on the number line. $\frac{2}{5}$

372) Represent the following rational numbers on the number line $\frac{5}{2}$

373) Represent $\frac{8}{3} and -\frac{8}{3}$ on the number line

374) Use the distributivity of multiplication of rational numbers over addition to simplify:

$\frac{3}{5}\times[\frac{35}{24}+\frac{10}{1}]$

375) Use the distributivity of multiplication of rational numbers over addition to simplify:

$\frac{-5}{4}\times[\frac{8}{5}+\frac{16}{15}]$

376) Use the distributivity of multiplication of rational numbers over addition to simplify:

$\frac{2}{7}\times[\frac{7}{16}-\frac{21}{4}]$

377) Use the distributivity of multiplication of rational numbers over addition to simplify:

$\frac{3}{4}\times[\frac{8}{9}-40]$

378) Divide the sum of $\frac{25}{12}$ and $\frac{5}{3}$ bv their difference.

379) Find the cost of $8\frac{1}{3}$ metre of cloth at Rs $2\frac{5}{3}$ per meter

380) If the product of two rational numbers is $3\frac{5}{4}$ and one of the rational number is $3\frac{5}{6}$ then find the other rational number

381) Write 4 rational numbers between 2 and 3.

382) Represent the rational number $\frac{-7}{3}$ on the number line

383) A train is moving at an average speed of $22\frac{12}{4}$ km/h. How much distance will it cover in $4\frac{3}{2}$ h?

384) What should be subtracted from $\frac{-2}{3}$ to get $\frac{5}{12}$

385) Simplify $\frac{5}{4}+\frac{-3}{8}+\frac{1}{2}-\frac{7}{4}$

386) Give one example each to show that the rational numbers are closed under addition, subtraction and multiplication. Are rational numbers closed under division? Give two examples in support of your answer

387) Simplify each of the following by using suitable property. Also name the properties.
$[\frac{1}{2} \times \frac{1}{4}] + [\frac{1}{2} \times 6]$

388) Simplify each of the following by using suitable property. Also name the properties.
$[\frac{1}{5} \times \frac{2}{15}] - [\frac{1}{5} \times \frac{2}{5}]$

389) Simplify each of the following by using suitable property. Also name the properties.
$\frac{-3}{5} \times \{\frac{3}{7} + (\frac{-5}{6})\}$

390) $\frac{2}{5}$ of total number of students of a school come by car, while $\frac{1}{4}$ of students come by bus to school. All the other students walk to school of which $\frac{1}{3}$ walk on their own and the rest are escorted by their parents. If 224 students come to school walking on their own, how many students study in that school?

391) Huma, Hubna, and Seema received a total of Rs 2016 as monthly allowance from their mother, such that Seema gets $\frac{1}{2}$ of what Huma gets and Hubna gets times Seema's share. How much money do the three sisters get, individually?

392) A mother and her two daughters got a room constructed for Rs 60000. The elder daughter contributes $\frac{3}{8}$ of her mother's contribution while the younger daughter contributes $\frac{1}{2}$ of her mother's share. How much do the three contribute individually?

393) The table shows the portion of some common materials that are recycled.

Material	**Recycled**
Paper	$\frac{5}{11}$
Aluminium cans	$\frac{5}{8}$
Glass	$\frac{2}{5}$
Scrap	$\frac{3}{4}$

(a) Is the rational number expressing the amount of paper recycled more than $\frac{1}{2}$ or less than $\frac{1}{2}$?

(b) Which items have a recycled amount less than $\frac{1}{2}$?
(c) Is the quantity of aluminium cans recycled more (or less) than half of the quantity of aluminium cans?
(d) Arrange the rate of recycling the materials from the greatest to the smallest.
(e) What do you understand from recycling and how it is useful?

394) A mother and her two daughters got a room constructed for Rs 60000. The elder daughter contributes $\frac{3}{8}$ of her mother's contribution while the younger daughter contributes $\frac{1}{2}$ of her mother's share. How much do the three contribute individually?

395) The table shows the portion of some common materials that are recycled.

Material	**Recycled**
Paper	$\frac{5}{11}$
Aluminium cans	$\frac{5}{8}$
Glass	$\frac{2}{5}$
Scrap	$\frac{3}{4}$

(a) Is the rational number expressing the amount of paper recycled more than $\frac{1}{2}$ or less than $\frac{1}{2}$?

(b) Which items have a recycled amount less than $\frac{1}{2}$?

(c) Is the quantity of aluminium cans recycled more (or less) than half of the quantity of aluminium cans?

(d) Arrange the rate of recycling the materials from the greatest to the smallest.

(e) What do you understand from recycling and how it is useful?

396) Four friends had a competition to see how far could they hop on one foot. The table given shows the distance covered by each

Name	**Distance covered (in km)**
Seema	$\frac{1}{25}$
Nancy	$\frac{1}{32}$
Megha	$\frac{1}{40}$
Soni	$\frac{1}{20}$

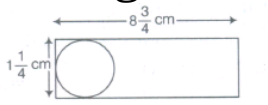
(a) How farther did Soni hop than Nancy?

(b) What is the total distance covered by Seema and Megha?

(c) Who walked farther Nancy or Megha?

(d) What is the benefit of competition?

397) Shalini has to cut out circles of diameter $1\frac{1}{4}$ cm from an aluminium strip of dimensions $8\frac{3}{4}$ cm by $1\frac{1}{4}$ cm . How many full circles can Shalini cut? Also, calculate the wastage of the aluminium strip.



398) Manavi and Kuber each receives an equal allowance. The table shows the fraction of their allowance, each deposits into his/her saving account and the fraction each spends at the mall:

Money goes to	**Fraction of allowance**	
	Manavi	**Kuber**
Saving account	1/2	1/3
Spend at mall	1/4	3/5
Left over	?	?

If allowance of each is Rs1260, find the amount left with each.

399) One fruit salad recipe requires $\frac{1}{2}$ of sugar. Another recipe for the same fruit salad requires 2 tablespoons of sugar. If 1 tablespoon is equivalent to $\frac{1}{16}$ cup. Then, how much more sugar does the first recipe require?

400) The overall width in centimetre of several widescreen television are 97.28 cm, 98 $\frac{4}{9}$ cm 98 $\frac{1}{25}$cm and 97.94 cm . Express these numbers as rational numbers in the form $\frac{p}{q}$ and arrange the widths in an ascending order.

401) One fruit salad recipe requires $\frac{1}{2}$ of sugar. Another recipe for the same fruit salad requires 2 tablespoons of sugar. If 1 tablespoon is equivalent to $\frac{1}{16}$ cup. Then, how much more sugar does the first recipe require?

402) The overall width in centimetre of several widescreen television are 97.28 cm, 98 $\frac{4}{9}$ cm 98 $\frac{1}{25}$cm and 97.94 cm . Express these numbers as rational numbers in the form $\frac{p}{q}$ and arrange the widths in an ascending order.

403) Here is a table, which gives the information about the total rainfall for several months compared to the average monthly rain of a town. Write each decimal in the form of rational number $\frac{p}{q}$

Month	**Above/Below normal (in cm)**
May	2.6924
June	0.6096
July	-6.9088
August	-8.636

404) Segal bought 5 $\frac{2}{3}$kg of sweets for Diwali celebration. On the way to her home, she distributed $\frac{2}{7}$ of sweets to street children and $\frac{5}{11}$ of sweets to some children suffering from cancer in a hospital.
(a) How much sweets she is left with?
(b) What kind of values are depicted by Segal?

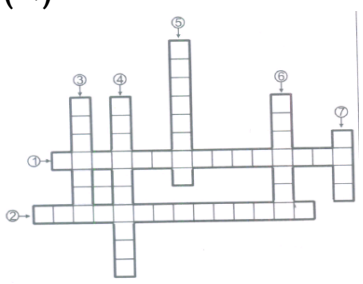
405) Find three rational numbers between $\frac{1}{2}$ and $\frac{1}{5}$

406) Find three rational numbers between $\frac{1}{2}$ and (-2)

407) Complete the following crossword puzzle using given directions.

Across:

(1) The negative of a rational number is called its _____.
(2) A number of the form where p and q are integers and q $\neq$ 0, is called a _____.



(3) The_____ of a rational number and its product is 1.
(4) The multiplicative inverse of a number is also called its _____.
(5) Zero is also called the_____ identity for rational numbers.
(6) If the product of two rational numbers is 1, then they are called multiplicative_____ of each other.
(7) The rational number is_____ the additive identity for rational numbers.

408) Check for closure property under all the four operations for natural numbers.

409) Recall the commutativity of different operations for whole numbers by filling the following table.

OPERATION	**NUMBERS**	**REMARKS**
Addition	0+7=7+0=7 2+3= _____ + _____ = _____ For any two whole numbers a and b, a+b=b+a	Addition is commutative.
Subtraction	_____	Subtraction is not commutative.
Mulltiplication	_____	Multiplication is commutative.
Division	_____	Division is not commutative.

Check whether the commutativity of the operations holds for natural numbers also.

410) Recall the associativity of the four operations for whole numbers through this table:

OPERATION	**NUMBERS**	**REMARKS**
Addition	_____	Addition is associative.
Subtraction	_____	Subtraction is not associative.
Multiplication	Is $7 \times (2 \times 5) = (7 \times 2) \times 5$? Is $4 \times (6 \times 0) = (4 \times 6) \times 0$? For any three whole numbers a, b and c $a \times (b \times c) = (a \times b) \times c$?	Multiplication is associative.
Division	_____	Division is not associative.

Fill in this table and verify the remarks given in the last column.
Check for yourself the associativity of different operations for natural numbers.

****