Swotters Academy

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Test / Exam Name: Maths - Rational Numbers **Standard: 8th** **Subject: Mathematics**

Student Name: ..... **Section:** ..... **Roll No.:** .....

Questions: 23 | **Time: 01:15 hh:mm** | **Marks: 40**

Instructions

1. Rough work on the right side and new section from new page
2. Honesty is the best policy. Good Luck.
3. Keep the timer & make sure to spare 10 min for rechaecking your paper

SECTION-A

Q1. a + b = b + a is called: **1 Mark**

A Commutative law of addition **B** Associative law of addition
C Distributive law of addition **D** None of these

Q2. What is the sum of the additive inverse and multiplicative inverse of 2? **1 Mark**

A $\frac{3}{2}$ **B** $\frac{-3}{2}$ **C** $\frac{1}{2}$ **D** $\frac{-1}{2}$

Q3. A rational number can be represented in the form of: **1 Mark**

A p - q **B** pq
C $\frac{p}{q}$ **D** p + q

Q4. Which of the following numbers has no multiplicative inverse: **1 Mark**

A Zero **B** 1 **C** -1 **D** None of these

Q5. Which of the following is an example of distributive property of multiplication over addition for rational numbers. **1 Mark**

A $-\frac{1}{4} \times \left\{\frac{2}{3} + \left(\frac{-4}{7}\right)\right\} = \left[-\frac{1}{4} \times \frac{2}{3}\right] + \left[-\frac{1}{4} \times \left(\frac{-4}{7}\right)\right]$
B $-\frac{1}{4} \times \left\{\frac{2}{3} + \left(\frac{-4}{7}\right)\right\} = \left[\frac{1}{4} \times \frac{2}{3}\right] - \left(\frac{-4}{7}\right)$
C $-\frac{1}{4} \times \left\{\frac{2}{3} + \left(\frac{-4}{7}\right)\right\} = \frac{2}{3} + \left(-\frac{1}{4}\right) \times \frac{-4}{7}$
D $-\frac{1}{4} \times \left\{\frac{2}{3} + \left(\frac{-4}{7}\right)\right\} = \left\{\frac{2}{3} + \left(\frac{-4}{7}\right)\right\} - \frac{1}{4}$

Q6. _____ Is not associative for rational numbers. **1 Mark**

A Subtraction or Division **B** Addition or Multiplication
C Addition or Division **D** Multiplication or Division

Q7. Is addition commutative on rational numbers? **1 Mark**

Q8. Name the property of multiplication illustrated of the following statement: **1 Mark**
$\frac{-11}{15} \times \frac{15}{-11} = \frac{-15}{-11} \times \frac{-11}{15} = 1$

Q9. If $a \neq 0$, the multiplicative inverse of $\frac{a}{b}$ is $\frac{b}{a}$. **1 Mark**

Q10. The negative of a negative rational number is always a _____ rational number. **1 Mark**

Q11. $(213 \times 657)^{-1} = 213^{-1} \times$ _____. **1 Mark**

Q12. Name the property used in each of the following. **1 Mark**
$-\frac{2}{3} \times \left[\frac{3}{4} + \frac{-1}{2}\right] = \left[\frac{-2}{3} \times \frac{3}{4}\right] + \left[\frac{-2}{3} \times \frac{-1}{2}\right]$

Q13. Verify -(-x) = x for: **1 Mark**
$x = \frac{3}{5}$

Q14. Verify the property x × y = y × z of rational numbers by using: **2 Marks**
$x = 7$ and $y = \frac{1}{2}$

SECTION-B

Q15. Represent these numbers on the number line. **2 Marks**
$\frac{-5}{6}$

Q16. Verify the property x + y = y + x of rational numbers by taking. **2 Marks**
$x = \frac{1}{2}, y = \frac{1}{2}$

Q17. Use the distributivity of multiplication of rational numbers over addition to simplify. **2 Marks**
$\frac{2}{7} \times \left[\frac{7}{16} + \frac{21}{4}\right]$

Q18. Use the distributivity of multiplication of rational numbers over addition to simplify. **2 Marks**
$\frac{-5}{4} \times \left[\frac{8}{5} + \frac{16}{15}\right]$

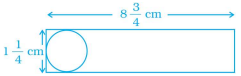
Q19. $\frac{2}{9}$ of total number of students of a school come by car while $\frac{1}{4}$ of students come by bus to school. All the other students walk to school of which $\frac{1}{3}$ walk on their own and the rest are escorted by their parents. If 224 students come to school walking on their own, how many students study in that school? **3 Marks**

Q20. 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? **3 Marks**

Q21. Tell which property allows you to compare. **3 Marks**
$\frac{2}{3} \times \left[\frac{3}{4} \times \frac{5}{7}\right]$ and $\left[\frac{2}{3} \times \frac{5}{7}\right] \times \frac{3}{4}$

SECTION-C

Q22. 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. **4 Marks**



Q23. One fruit salad recipe requires $\frac{1}{2}$ cup of sugar. Another recipe for the same fruit salad requires 2 tablespoons of sugar. If 1 tablespoon is equivalent to $\frac{1}{16}$ cup, how much more sugar does the first recipe require? **4 Marks**