ALLEN IntelliBrain®

Experiential Experimental Edutaining

MATHS

SAMPLE BOOK

5 GRADE

MATHS

I'm the

Intelli Kid

.....

and

I'm becoming the

Best Version

of myself with

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GRADE-5

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I AM PROGRESSING

(Tick mark the columns after achieving the Learning Milestones)

TOPIC	1st Learning	Exercise Solving	1st Revision	2nd Revision
Numerals, Number Names and Number Sense				
Roman Numerals				
Computation Operations				
Factors and Multiples				
Fractions and Decimals				
Percentage				
Money				
Time				
Ratio and Proportion				
Time and Distance				

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MATHS

SAMPLE THEORY

CHAPTER 5

FRACTIONS AND DECIMALS

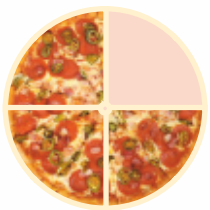
FRACTION

Fraction is defined as the "part of a whole".

A Fraction is written as a top number and a bottom number with a line separating them.

(i) The top number (the numerator) says how many parts we have, of the whole.

(ii) The bottom number (the denominator) says how many parts, the whole is divided into.



$\frac{3}{4}$ ← Numerator

$\frac{3}{4}$ ← Denominator

Fractions are important because they tell us what portion of a whole we need, have or want.

TYPES OF FRACTIONS

Like Fractions

$\frac{2}{6}$ $\frac{1}{6}$ $\frac{3}{6}$

Same Denominators

Unlike Fractions

$\frac{1}{2}$ $\frac{2}{3}$ $\frac{3}{4}$

Different Denominators

Proper Fractions

$\frac{3}{6}\left(=\frac{1}{2}\right)$

Numerator less than Denominator

Improper Fractions

$\frac{8}{6}$

Denominator less than Numerator

Equivalent Fractions

$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$

Represents the same value

Mixed Fractions

$1 + \frac{5}{6}$

$1\frac{5}{6}$

Whole number combined with fraction

OPERATIONS WITH FRACTIONS

Multiplication of Fractions

To Multiply a Fraction by another fraction, we multiply the numerator of one fraction by the numerator of the other fraction and the denominator of one fraction by the denominator of the other fraction.

Example: Solve $\frac{1}{2} \times \frac{2}{3}$

Solution: $\frac{1}{2} \times \frac{2}{3} = \frac{2}{6} = \frac{1}{3}$

Division of Fractions

To Divide a Fraction by another fraction, we change the sign of division into the sign of multiplication and turn the second fraction upside down (this is known as a reciprocal) and then multiply the two fractions.

Example: Divide $\frac{1}{2}$ by $\frac{1}{6}$

Solution: $\frac{1}{2} \div \frac{1}{6}$

$= \frac{1}{2} \times \frac{6}{1}$ ← Reciprocal

$= \frac{6}{2} = 3$

CONVERTING FRACTIONS

Improper Fraction to Mixed Fraction

- Divide the numerator by the denominator. The **quotient** represents the **whole number** part, the **remainder** represents the **numerator** and the **divisor** represents the **denominator** for the fractional part in a mixed fraction.

Example: Improper Fraction

$\frac{7}{4}$

Divide

Quotient

$4\overline{)7}$

-4

Divisor

Remainder

Mixed Fraction

$= 1\frac{3}{4}$

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SAMPLE EXERCISE

EXERCISE

GRADE-5

Fractions and Decimals

Directions: Solve the following multiple choice questions by choosing the most appropriate option.

1. The equivalent fraction of $\frac{4}{7}$ with numerator 20 is _____.

(1) $\frac{20}{30}$ (2) $\frac{20}{21}$ (3) $\frac{20}{28}$ (4) $\frac{20}{35}$

2. A piece of a ribbon is $3\frac{5}{7}$ m long. There are 21 pieces of ribbon. Find out the total length of 21 pieces of ribbon.

(1) 29 m (2) 80 m (3) 78 m (4) 79 m

3. Choose a pair of equivalent fractions.

(1) $\frac{3}{7}$ & $\frac{10}{35}$ (2) $\frac{9}{16}$ & $\frac{27}{48}$ (3) $\frac{5}{8}$ & $\frac{30}{40}$ (4) $\frac{6}{11}$ & $\frac{66}{110}$

4. Which of the following shows the fraction and decimal of vowels in the word 'TELEPHONE'?

(1) $\frac{4}{9}$ & 0.44 (2) $\frac{4}{5}$ & 0.8 (3) $\frac{4}{10}$ & 0.4 (4) $\frac{3}{9}$ & 0.33

5. $\frac{3}{100}$ is read as :

(1) three tens (2) three tenths (3) three sevenths (4) three hundredths

6. Solve: $900 + 90 + \frac{9}{10} + \frac{9}{100}$.

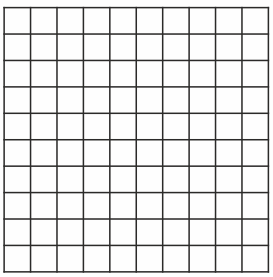
(1) 990.99 (2) 99.99 (3) 909.09 (4) 990.09

7. Solve: $\frac{8}{13} - \frac{7}{13} + \frac{1}{13} = ?$

(1) $\frac{2}{13}$ (2) $\frac{1}{13}$ (3) $\frac{16}{13}$ (4) $\frac{14}{13}$

8. Rajeev wants to shade $\frac{22}{100}$ part of the grid. How many blocks will he shade ?

(1) 22
(2) 100
(3) 2
(4) None of these



9. Convert $15\frac{3}{14}$ into an improper fraction.

(1) $\frac{213}{14}$ (2) $\frac{14}{213}$ (3) $\frac{18}{14}$ (4) None of these

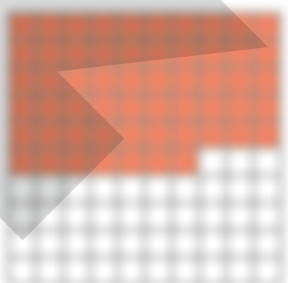
10. Which of the following is arranged in ascending order ?

(1) 0.3 < 0.5 < 0.8 (2) 0.5 < 0.8 < 0.3 (3) 0.8 < 0.5 < 0.3 (4) 0.3 < 0.8 < 0.5

11. Round off 7.825 to the nearest tenths.

(1) 7.700 (2) 7.800 (3) 8.000 (4) 7.820

12. Which of the following fractions is greater than the shaded part of the given grid ?



(1) $\frac{51}{100}$ (2) $\frac{43}{100}$

(3) $\frac{58}{100}$ (4) $\frac{49}{100}$

13. Subtract $5\frac{1}{7}$ from $6\frac{5}{7}$

(1) $1\frac{4}{7}$ (2) $7\frac{1}{7}$ (3) $4\frac{1}{7}$ (4) None of these

14. Convert 7.25 into mixed fraction.

(1) $5\frac{3}{4}$ (2) $4\frac{4}{3}$ (3) $7\frac{1}{4}$ (4) $2\frac{3}{4}$

15. Choose the missing denominator in $\frac{42}{6} = \frac{7}{\square} = 54$.

(1) 21 (2) 9 (3) 24 (4) 32

16. Convert $\frac{23}{7}$ into decimal. (Upto two decimal places.)

(1) 3.28 (2) 3.32 (3) 3.29 (4) 32.80

17. Simplify $3\frac{5}{2} + 2\frac{6}{7} \times \frac{9}{26} \times 4\frac{1}{5} \div 3$

(1) $26\frac{23}{4}$ (2) $23\frac{26}{4}$ (3) $4\frac{23}{26}$ (4) $4\frac{26}{23}$