FRACTIONS AND PERCENTAGES

VULGAR FRACTION:

A vulgar fraction is another name for a common fraction. it is a fraction in which a numerator and a denominator are integers.

Examples: $\frac{2}{100}$, $\frac{18}{5}$ etc

MIXED NUMBERS:

Numbers that have an integer and a fraction in them are called as mixed numbers.   Examples:$8\frac{3}{4}$, $3\frac{7}{10}$ etc

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Note:
IMPROPER FRACTIONS:
Fractions in which the numerator is greater than the denominator are called as improper fractions
Example:s 100/2, 8/3, 2178/17 etc

PROPER FRACTIONS
Fractions in which the numerator is smaller than the denominator are called as proper fractions
Examples: 1/4, 18/100 , 25/68   etc

OPERATIONS ON VULGAR FRACTIONS /DECIMAL FRACTIONS AND MIXED NUMBERS:

ADDITION:

METHOD:

Find the LCM and thus equalise the denominator and then add them as shown below:

$$\frac{2}{4} + \frac{8}{3} = \frac{2x3}{4x3} + \frac{8x4}{4x3} = \frac{6}{12} + \frac{32}{12} = \frac{38}{12}$$

$$\frac{2}{4} + 3\frac{8}{3} = \frac{2}{4} + \frac{3x\,3+(8)}{3} = \frac{2}{4} + \frac{17}{3} = \frac{2x3}{4x3} + \frac{17x4}{4x3} = \frac{74}{12}$$

SUBTRACTION:

Find the LCM and thus equalise the denominator and then add them as shown below:

$$\frac{2}{4} - \frac{8}{3} = \frac{2x3}{4x3} - \frac{8x4}{4x3} = \frac{6}{12} - \frac{32}{12} = \frac{-26}{12}$$

$$\frac{2}{4} - 3\frac{8}{3} = \frac{2}{4} - \frac{3x\,3+(8)}{3} = \frac{2}{4} - \frac{17}{3} = \frac{2x3}{4x3} - \frac{17x4}{4x3} = \frac{-62}{12}$$

MULTIPLICATION:

Simply multiply the numerator by the numerator and the denominator by the denominator as shown below:

$$\frac{2}{4}x\frac{8}{3} = \frac{2x8}{4x3} = \frac{16}{12}$$

$$\frac{2}{4}x\,3\frac{8}{3} = \frac{2}{4}x\frac{3x\,3+(8)}{3} = \frac{2}{4}x\frac{17}{3} = \frac{2x17}{4x3} = \frac{34}{12}$$

DIVISION:

Simply reverse the second fraction and insert a multiplication sign and continue solving normally as shown below:

$$\frac{2}{4} \div \frac{8}{3} = \frac{2}{4} \times \frac{3}{8} = \frac{2 \times 3}{4 \times 8} = \frac{6}{32}$$

Incase of a mixed number convert it into a vulgar fraction and then continue solving it in the above mentioned way

$$\frac{2}{4} \div 3\frac{8}{3} = \frac{2}{4} \div \frac{3 \times 3 + (8)}{3} = \frac{2}{4} \div \frac{17}{3} = \frac{2}{4} \times \frac{3}{17} = \frac{4}{68}$$

CONVERTING RECURRING DECIMALS TO FRACTIONS:

APPLICATION BASED QUESTIONS:

1.

1   Calculate   0580/02, 0581/02 Jun 05

$$\frac{5^2}{2^5}$$

    (a) giving your answer as a fraction,

                                     Answer (a) .... [1]

2.Reducing fractions in their lowest form:

14 A company makes two models of television.
    Model *A* has a rectangular screen that measures 44 cm by 32 cm.
    Model *B* has a larger screen with these measurements increased in the ratio 5:4.

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    (a) Work out the measurements of the larger screen.

    Answer(a) .... cm by .... cm [2]

    (b) Find the **fraction** $\dfrac{\text{model } A \text{ screen area}}{\text{model } B \text{ screen area}}$ in its simplest form.

    Answer(b) .... [1]

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3. Identifying the fraction and percentages:

5   A tin of soup has the following information on the label.

200 grams of soup contains		
Protein	Carbohydrate	Fat
4 g	8.7 g	5.8 g

(a) What fraction of the soup is Protein? Give your answer in its simplest form.

Answer(a) .... [1]

(b) What percentage of the soup is Carbohydrate?

Answer(b) .... % [1]

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4. Operations on fractions:

12 **Without using your calculator**, work out the following.
Show all the steps of your working and give each answer as a fraction in its simplest form.

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(a) $\dfrac{11}{12} - \dfrac{1}{3}$

Answer(a) .... [2]

(b) $\dfrac{1}{4} \div \dfrac{11}{13}$

Answer(b) .... [2]

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5. Operations on mixed numbers and fractions:

9 **Without using a calculator**, work out $1\frac{4}{5} \div \frac{3}{7}$.

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Show all your working and give your answer as a fraction in its lowest terms.

Answer .... [3]

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6. Change recurring decimal as a fraction:

9   Write the recurring decimal $0.2\dot{5}$ as a fraction.
     [$0.2\dot{5}$ means 0.2555...]

Answer .... [2]

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4   Find the value of $\left(\dfrac{27}{8}\right)^{-\frac{4}{3}}$.

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Give your answer as an exact fraction.

Answer .... [2]