

## The Primary Stage of Grades (4-5)

Second Semester 2022 - 2023

Name: Answer Key

Subject: Mathematics

Date: / /

Worksheet(4 )

Class: Grade 5 (C,D,E,F&G)

### Objectives:

Add and subtract fractions with like and unlike denominators .

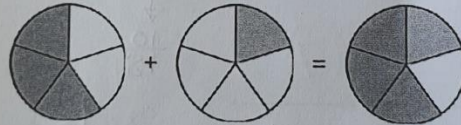
### Adding and subtracting simple fractions

When fractions have the same denominator it is quite easy to add them together and to subtract them.

For example,

$$\frac{3}{5} + \frac{1}{5} = \frac{3+1}{5} = \frac{4}{5}$$

We can show this calculation in a diagram:



1) Find the answer for each number sentence below in the simplest form

a)  $\frac{3}{8} + \frac{1}{8} = \boxed{\frac{4}{8} = \frac{1}{2}}$

b)  $\frac{7}{10} + \frac{2}{10} = \boxed{\frac{9}{10}}$

c)  $\frac{8}{9} - \frac{5}{9} = \boxed{\frac{3}{9} = \frac{1}{3}}$

d)  $\frac{10}{13} - \frac{7}{13} = \boxed{\frac{3}{13}}$

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We can use **equivalent fractions** to add fractions that do not have the same **denominator**.

For example:

$$\frac{3}{4} + \frac{1}{8}$$

We need to change  $\frac{3}{4}$  into an equivalent fraction with a denominator of 8.

$$\frac{3}{4} = \frac{6}{8}$$

(Diagram showing  $\frac{3}{4}$  and  $\frac{6}{8}$  with arrows and  $\times 2$  indicating the conversion)

Now we have:

$$\frac{6}{8} + \frac{1}{8} = \frac{7}{8}$$

e)  $\frac{3}{10} + \frac{2 \times 2}{5 \times 2} = \frac{7}{10}$

$\downarrow$   
 $\frac{4}{10}$

f)  $\frac{1 \times 4}{3 \times 4} + \frac{7}{12} = \frac{11}{12}$

$\downarrow$   
 $\frac{4}{12}$

g)  $\frac{9}{16} - \frac{1 \times 2}{8 \times 2} = \frac{7}{16}$

$\downarrow$   
 $\frac{2}{16}$

h)  $\frac{2 \times 5}{2 \times 9} - \frac{7}{18} = \frac{3}{18} = \frac{1}{6}$

$\downarrow$   
 $\frac{10}{18}$

i)  $\frac{9}{4} + \frac{1 \times 2}{2 \times 2} = \frac{9}{4} + \frac{2}{4} = \frac{11}{4}$

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

j)  $\frac{9 \times 2}{4 \times 2} + 2 \frac{1}{8} = \frac{18}{8} + 2 \frac{1}{8}$

$\downarrow$   
 $2 \frac{2}{8} + 2 \frac{1}{8}$

$4 \frac{3}{8}$

k)  $3 \frac{7}{16} - 1 \frac{1 \times 4}{4 \times 4} = 3 \frac{7}{16} - 1 \frac{4}{16}$

$= 2 \frac{3}{16}$

l)  $\frac{10 \times 4}{3 \times 4} - \frac{15}{12} = \frac{40}{12} - \frac{15}{12}$

$= \frac{25}{12}$

$= 2 \frac{1}{12}$

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

To add or subtract fractions with different denominators we have to convert them so they have the same or common denominator, a number that they will both divide into evenly.

Step 1 Work out the multiples for each denominator.

$$\frac{1}{3} \rightarrow 3, 6, 9, \textcircled{12}, 15 \quad \frac{1}{4} \rightarrow 4, 8, \textcircled{12}, 16, 20$$

Step 2 Then it's easy to see the least or lowest common denominator (multiple).  $\textcircled{12}$

Step 3 Convert your fraction to its equivalent using the lowest common denominator (multiple).  $\textcircled{12}$

$$\frac{1}{3} \xrightarrow{\times 4} \frac{4}{12} \quad \frac{1}{4} \xrightarrow{\times 3} \frac{3}{12} \quad \text{Don't forget to multiply the top AND the bottom}$$

Step 4 Add your equivalent fractions. You now have the answer.

$$\frac{4}{12} + \frac{3}{12} = \frac{7}{12} \quad \text{or} \quad \frac{1}{3} + \frac{1}{4} = \frac{7}{12}$$

$$m) \frac{3 \times 7}{5 \times 7} + \frac{4 \times 5}{7 \times 5} =$$

$$\frac{21}{35} + \frac{20}{35} = \frac{41}{35} = 1 \frac{6}{35}$$

$$n) \frac{6 \times 7}{6 \times 8} - \frac{5 \times 8}{6 \times 8} =$$

$$\frac{42}{48} - \frac{40}{48} = \frac{2}{48} = \frac{1}{24}$$

$$o) 4 \frac{3 \times 2}{5 \times 2} + 5 \frac{1 \times 5}{2 \times 5} =$$

$$4 \frac{6}{10} + 5 \frac{5}{10}$$

$$9 \frac{11}{10} = \frac{101}{10} = 10 \frac{1}{10}$$

$$p) 6 \frac{4 \times 3}{7 \times 3} - 3 \frac{1 \times 7}{3 \times 7} =$$

$$6 \frac{12}{21} - 3 \frac{7}{21}$$

$$3 \frac{5}{21}$$

OR  $9 \frac{11}{10} \rightarrow 1 \frac{1}{10} \rightarrow 10 \frac{1}{10}$

\* Extra :

a)  $8 \frac{1 \times 4}{5 \times 4} - 5 \frac{3 \times 5}{4 \times 5}$

or

|  |   |
|--|---|
| $8 \frac{4}{20} - 5 \frac{15}{20}$ $\downarrow$ $\frac{164}{20} - \frac{115}{20}$ $\frac{49}{20}$ $\boxed{2 \frac{9}{20}}$ | $\cancel{7} \frac{24}{20} - 5 \frac{15}{20}$ $\boxed{2 \frac{9}{20}}$ |
|--|---|

b)  $2 \frac{1}{8} - \frac{1 \times 2}{4 \times 2}$

or

|  |  |
|--|--|
| $2 \frac{1}{8} - \frac{2}{8}$ $\downarrow$ $\frac{17}{8} - \frac{2}{8}$ $\frac{15}{8} = 1 \frac{7}{8}$ | $\cancel{1} \frac{9}{8} - \frac{2}{8}$ $1 \frac{7}{8}$ |
|--|--|

c)  $\cancel{24} \times 7 - 5 \frac{13}{24}$

$$\downarrow$$

$$\frac{168}{24} - \frac{133}{24}$$

$$\frac{35}{24}$$

$$\downarrow$$

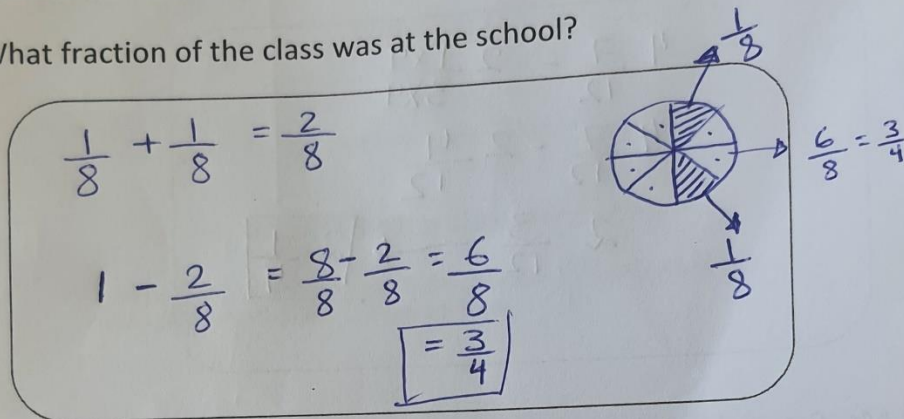
$$\boxed{1 \frac{11}{24}}$$

or

|   |
|---|
| $\cancel{7} - 5 \frac{13}{24}$ $\downarrow$ $6 \frac{24}{24} - 5 \frac{13}{24}$ $\boxed{1 \frac{11}{24}}$ |
|---|

- 2) Ms. Bloom is one of the Grade 5 teachers in the school.
- a) On Friday, many of the students were missing in her class.
- $\frac{1}{8}$  of the class went to a basketball tournament and  $\frac{1}{8}$  of the class called in sick.

What fraction of the class was at the school?



- b) Ms. Bloom has  $\frac{15}{16}$  of a pack of construction papers for the art project at her desk.

Ms. Bloom takes another 2 new packs of construction papers to the class.

The students use  $1\frac{1}{4}$  packs for the art project.

How many packs of construction papers are left?

$$2 + \frac{15}{16} = 2\frac{15}{16}$$

$$2\frac{15}{16} - 1\frac{1 \times 4}{4 \times 4} \rightarrow 2\frac{15}{16} - 1\frac{4}{16}$$

$1\frac{11}{16}$

c) Ms. Bloom had  $4\frac{7}{12}$  boxes of pencils but  $2\frac{1}{3}$  boxes of the pencils were broken.

After she threw out the broken pencils.

How many boxes of pencils were left?

$$\begin{array}{r}
 4\frac{7}{12} - 2\frac{1 \times 4}{3 \times 4} \\
 4\frac{7}{12} - 2\frac{4}{12} \\
 2\frac{3}{12} \rightarrow \boxed{2\frac{1}{4}}
 \end{array}$$

d) Ms. Bloom brought 4 packs of treats for Halloween.

\*(Extra)

She gave away  $2\frac{1}{9}$  packs of treats to her class and gave away

$\frac{2}{3}$  pack of the treats to the other 2 classes that came to her class for trick-or-treating.

How many packs of treats did she have left?

$$\begin{array}{r}
 \frac{3 \times 2}{3 \times 3} + 2\frac{1}{9} \\
 \frac{6}{9} + 2\frac{1}{9} = 2\frac{7}{9} \\
 \rightarrow \\
 \textcircled{4} - 2\frac{7}{9} \\
 \downarrow \\
 3\frac{9}{9} - 2\frac{7}{9} \\
 \boxed{1\frac{2}{9}}
 \end{array}$$