"supporting schooling for excellence"

NAME: MEMO

GRADE: 7
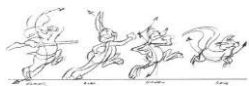
TERM: _____

TEACHER: _____

SCHOOL: _____

FRACTIONS

QUICK MATHS

Add:

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

- $\frac{6}{13} + \frac{4}{13} = \frac{10}{13}$

- $\frac{7}{15} + \frac{7}{15} = \frac{14}{15}$

- $\frac{3}{7} + \frac{4}{7} = \frac{7}{7} = 1$

- $\frac{10}{17} + \frac{5}{17} = \frac{15}{17}$

- **QUESTION 1**

1.1 Complete the patterns.

a)

a	1	2	6	9	$10\frac{1}{4}$
b = a + $\frac{3}{4}$	$1\frac{3}{4}$	$2\frac{3}{4}$	i. $6\frac{3}{4}$	ii. $9\frac{3}{4}$	iii. 11

b)

a	$1\frac{1}{2}$	$2\frac{1}{2}$	$4\frac{1}{2}$	$7\frac{1}{4}$	$9\frac{1}{6}$
b = a + $1\frac{1}{2}$	3	4	i. 6	ii. $8\frac{3}{4}$	iii. $10\frac{2}{3}$

c)

a	$1\frac{2}{5}$	$2\frac{4}{5}$	$3\frac{3}{5}$	$4\frac{5}{5}$	$5\frac{4}{5}$
b = a + $5\frac{1}{5}$	$6\frac{3}{5}$	8	i. $8\frac{4}{5}$	ii. $10\frac{1}{5}$	iii. 11

1.2 Add by showing all your steps and simplify.

a) $4\frac{2}{3} + 6\frac{4}{9}$

$4\frac{6}{9} + 6\frac{4}{9} = 10\frac{10}{9} = 11\frac{1}{9}$

b) $2\frac{4}{5} + 3\frac{6}{15}$

$(2 + 3) + (\frac{12}{15} + \frac{6}{15}) = 5 + \frac{18}{15} = 6\frac{3}{15} = 6\frac{1}{5}$

c) $6\frac{8}{9} + 4\frac{2}{3} + \frac{7}{18}$

$10 + \frac{16}{18} + \frac{12}{16} + \frac{7}{18} = 10\frac{35}{18} = 11\frac{17}{18}$

d) $\frac{7}{8} + 5\frac{1}{2} + 1\frac{3}{4}$

$$6 + \frac{7}{8} + \frac{4}{8} + \frac{6}{8} = 6\frac{17}{8} = 8\frac{1}{8}$$

e) $10\frac{6}{11} + 5\frac{9}{22}$

$$15 + \frac{12}{22} + \frac{9}{22} = 15\frac{21}{22}$$

f) $3\frac{5}{12} + 4\frac{4}{5}$

$$7 + \frac{25}{60} + \frac{48}{60} = 7\frac{73}{60} = 8\frac{13}{60}$$

1.3 Use the rule to complete the tables.

a) $y = x + \frac{4}{5}$

x	$\frac{5}{7}$	$\frac{8}{10}$	$\frac{7}{12}$	$\frac{8}{11}$	$\frac{4}{13}$
y	$1\frac{18}{35}$	$1\frac{3}{5}$	$1\frac{23}{60}$	$1\frac{23}{55}$	$1\frac{7}{65}$

b) $y = x + 2\frac{3}{8}$

x	$2\frac{3}{4}$	$5\frac{6}{7}$	$6\frac{2}{3}$	$7\frac{5}{6}$	$9\frac{1}{2}$
y	$5\frac{1}{8}$	$8\frac{13}{56}$	$9\frac{1}{24}$	$10\frac{5}{24}$	$11\frac{7}{8}$

1.4 Write down a number sentence and show all the steps to calculate the following.

a) A tree grows $1\frac{1}{3}$ m each year. How high will the tree be in 4 years?

$$\text{The tree grew } 1\frac{1}{3} + 1\frac{1}{3} + 1\frac{1}{3} + 1\frac{1}{3} = 4\frac{4}{3} = 5\frac{1}{3} \text{ m in 4 years}$$

b) A gardener plants shrubs. The first day he planted $\frac{7}{20}$ of the garden. The second day he planted $\frac{5}{8}$ of the garden and the third day $\frac{3}{10}$. How many parts of the garden did he plant?

$$\text{The gardener planted } \frac{7}{20} + \frac{5}{8} + \frac{3}{10} = \frac{28+25+12}{40} = \frac{65}{40} = 1\frac{25}{40} = 1\frac{5}{8} \text{ of the garden}$$

QUICK MATHS

Subtract:

- $\frac{7}{15} - \frac{2}{15} = \frac{5}{15} = \frac{1}{3}$

- $\frac{3}{8} - \frac{1}{8} = \frac{2}{8} = \frac{1}{4}$

- $\frac{7}{9} - \frac{6}{9} = \frac{1}{9}$

- $\frac{10}{20} - \frac{1}{2} = \frac{1}{2} - \frac{1}{2} = 0$

2

QUESTION 2

2.1 Complete the patterns

a)

a	2	3	4	5	6
b = a - $\frac{5}{7}$	$1\frac{2}{7}$	$2\frac{2}{7}$	I. $3\frac{2}{7}$	II. $4\frac{2}{7}$	III. $5\frac{2}{7}$

b)

a	$2\frac{1}{3}$	$3\frac{1}{4}$	$4\frac{1}{5}$	$5\frac{1}{6}$	$6\frac{1}{7}$
b = a - $\frac{1}{2}$	$1\frac{5}{6}$	$2\frac{3}{4}$	I. $3\frac{7}{10}$	II. $4\frac{2}{3}$	III. $5\frac{9}{14}$

c)

a	3	5	7	9	11
b = a - $1\frac{3}{5}$	$\frac{7}{5}$	$\frac{17}{5}$	I. $\frac{27}{5}$	II. $\frac{37}{5}$	III. $\frac{47}{5}$

2.2 Subtract.

a) $3\frac{2}{7} - \frac{5}{7}$

$$\frac{23}{7} - \frac{5}{7} = \frac{18}{7} = 2\frac{4}{7}$$

b) $5\frac{6}{7} - 2\frac{3}{7}$

$$(5-2) + (\frac{6}{7} - \frac{3}{7}) = 3\frac{3}{7}$$

c) $4\frac{1}{3} - 1\frac{1}{2}$

$$\frac{13}{3} - \frac{3}{2} = \frac{26}{6} - \frac{9}{6} = \frac{17}{6} = 2\frac{5}{6}$$

d) $6 - 3\frac{5}{8}$

$$\frac{6}{1} - \frac{29}{8} = \frac{48}{8} - \frac{29}{8} = \frac{19}{8} = 2\frac{3}{8}$$

e) $1\frac{8}{11} - \frac{5}{6}$

$$\frac{19}{11} - \frac{5}{6} = \frac{114-55}{66} = \frac{59}{66}$$

f) $7\frac{1}{2} - 2\frac{1}{3} - \frac{1}{5}$

$$\frac{15}{2} - \frac{7}{3} - \frac{1}{5} = \frac{225-70-6}{30} = \frac{149}{30} = 4\frac{29}{30}$$

3

2.3 Use the rule to complete the tables.

a) $y = (2 + x) - \frac{4}{5}$

x	$\frac{3}{5}$	$\frac{4}{7}$	$\frac{5}{9}$	$\frac{6}{11}$	$\frac{7}{13}$
y	$1\frac{4}{5}$	$1\frac{27}{35}$	$1\frac{34}{45}$	$1\frac{41}{55}$	$1\frac{48}{65}$

b) $y = x - \frac{3}{4}$

x	$1\frac{1}{4}$	$2\frac{1}{2}$	$3\frac{3}{4}$	4	$5\frac{1}{5}$
y	$\frac{1}{2}$	$1\frac{3}{4}$	3	$3\frac{3}{4}$	$4\frac{9}{20}$

2.4 Write a number sentence and show all your working out when calculating the following.

a)   Sarie has 10 blocks of chocolate. She gives some to her friends. Jannie gets $4\frac{1}{2}$ of the blocks, Mpho $2\frac{1}{5}$ of the blocks and she gives Sipho $1\frac{1}{8}$ of the blocks. How much chocolate does Sarie have left?

$$4\frac{1}{2} + 2\frac{1}{5} + 1\frac{1}{8} = 7 + \left(\frac{20+8+5}{40}\right) = 7\frac{33}{40}$$

Sarie het $10 - 7\frac{33}{40} = 2\frac{7}{40}$ blocks of chocolate is left

b)   George is travelling to visit his family. The first day he drove $\frac{2}{3}$ km and the second day $\frac{4}{5}$ km of the journey. How many kilometres did he travel? How many kilometres does he have left to travel?

$\frac{2}{3} + \frac{4}{5}$ km = $1\frac{7}{15}$ km was completed

$2 - 1\frac{7}{15} = \frac{8}{15}$ km was left

QUICK MATHS

- Convert the mixed numbers to improper fractions.
- $3\frac{4}{7} = \frac{25}{7}$ $5\frac{1}{8} = \frac{41}{8}$

- $5\frac{2}{5} = \frac{27}{5}$ $8\frac{1}{2} = \frac{17}{2}$

- $9\frac{4}{5} = \frac{49}{5}$ $12\frac{2}{3} = \frac{38}{3}$
-

4

QUESTION 3

3.1 Complete the patterns.

a)

a	$\frac{10}{12}$	$\frac{15}{9}$	$\frac{20}{6}$	$\frac{25}{3}$	30
b = a x $\frac{3}{5}$	$\frac{1}{2}$	1	I. 2	II. 5	III. 45

b)

a	$\frac{1}{3}$	$\frac{2}{6}$	$\frac{3}{9}$	$\frac{4}{12}$	$\frac{5}{15}$
b = a x 3	1	1	i. 1	1	ii. 1

c)

a	5	10	15	20	25
b = a x $2\frac{1}{5}$	11	22	i. 33	ii. 44	iii. 55

3.2 Multiply the following by using the method that you learned.

a) $\frac{7}{12}$ x $\frac{8}{21}$

$\frac{2}{9}$

b) $3\frac{4}{6}$ x $1\frac{7}{11}$

$\frac{22}{6}$ x $\frac{18}{11}$ = 6

c) $5\frac{1}{2}$ x $4\frac{2}{5}$ x $\frac{10}{11}$

$\frac{11}{2}$ x $\frac{22}{5}$ x $\frac{10}{11}$ = 22

d) $\frac{5}{8}$ x 6 x $1\frac{4}{5}$

$\frac{5}{6}$ x $\frac{6}{1}$ x $\frac{9}{5}$ = 9

e) $3\frac{2}{3}$ x $2\frac{3}{4}$ x $1\frac{1}{11}$

$\frac{11}{3}$ x $\frac{11}{4}$ x $\frac{12}{11}$ = 11

f) $\frac{14}{5}$ x $\frac{20}{7}$ x 8

$\frac{14}{5}$ x $\frac{20}{7}$ x $\frac{8}{1}$ = 64

5

3.3 Complete the patterns by using the rules.

a) $y = x \times \frac{8}{20}$

x	100	240	360	480	500
y	40	96	144	192	200

b) $y = \frac{9}{10}$ of x

x	20	40	60	80	100
y	18	36	54	72	90

3.4 Write down a number sentence and show all your calculations.

a) A butcher sells $\frac{5}{6}$ of 3kg of meat to a customer. Calculate the amount of meat the customer bought in grams.

$\frac{5}{6}$ x 3000g = 2500g was given to the customer

3000-2500 = 500g are left

b) Another customer buys $\frac{3}{5}$ of the meat left from the meat in 3.4 a). How many grams of meat is left?

$\frac{3}{5}$ x 500g= 300g

500 – 300g = 200g are left

c) If the meat is R68 per kg, how much did the butcher make on the two sales?

The butcher made R68 x (2,8kg) = R190 40

DECIMAL FRACTIONS

QUICK MATHS

- Convert the fractions to decimal fractions,
- $\frac{5}{10}$ = 0,5 $3\frac{2}{10}$ = 3,2
- $\frac{9}{20}$ = 0,45 $\frac{8}{25}$ = 0,32
- $\frac{3}{10}$ = 0,3 $\frac{4}{10}$ = 0,4
- $\frac{2}{5}$ = 0,4 $\frac{12}{50}$ = 0,24

QUESTION 4

4.1 Complete the following patterns.

a)

a	$\frac{7}{10}$	$\frac{6}{12}$	$\frac{8}{20}$	$\frac{10}{20}$	$\frac{15}{20}$
b = a + 0,35	0,7 + 0,35 =1,05	0,5 + 0,35 = 0,85	i. 0,75	ii. 0,85	iii. 11

b)

a	12,8	14,2	16,3	18,1	20,9
b = a – 1,4	11,4	12,8	i. 14,9	ii. 16,7	iii. 19,5

c)

a	1,3	2,4	3,5	4,6	5,7
b = 0,46 x a	0,598	1,104	i. 1,61	ii. 2,116	iii. 2,622

4.2 Multiply using the method you learned.

a) 12,85 x 0,4

5,1

b) 4,235 x 0,23

0,97405

c) $\frac{8}{14}$ x $6\frac{7}{14}$

$3\frac{5}{7}$

d) $\frac{2}{10}$ x 15,43

3,086

e) 45,2 x $\frac{9}{100}$

4,068

f) 9 x 0,895

8,055

4.3 Complete the patterns.

a) y = 0,5**x** x 1,6

x	0,5	0,8	1,1	1,4	1,7
y	0,4	0,64	0,88	1,12	1,36

b) y = **x** – 5,123

x	12,8	14,9	16	18,21	20,46
y	7,677	9,777	10,877	13,087	15,337

4.4 Write down the number sentences and show all the calculations.

a) Work out the area of a floor if the length is 5,8m and the width is 2,7m. Area is length x width and is measured in m².
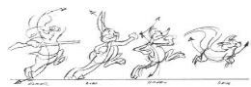
Area = l xw
=5,8m x 2,7m
15,66m² will be the area of the floor

b) Tiles cost R112,50 per m². What will the cost be to tile the floor?

R112,50 x 15,66 = R1 761,75 will be cost to tile the floor

PERCENTAGES

QUICK MATHS

Calculate the percentages.%

- $\frac{8}{10}$ = 80%

- $\frac{9}{20}$ = 45%

- $\frac{15}{30}$ = 50%

- $\frac{8}{15}$ = 53%

- $\frac{19}{25}$ = 76%

- $\frac{12}{25}$ = 48%

- $\frac{17}{50}$ = 34%

- $\frac{17}{34}$ = 50%

- $\frac{24}{40}$ = 60%

- $\frac{12}{60}$ = 20%

QUESTION 5

5.1 Complete each of the patterns.

a)

a	430	550	680	790	820
b = 20% van a	86	110	I. 136	II. 158	III. 164

b)

a	2 000	3 600	4 800	5 000	6 700
b = 35% van a	700	1260	I. 1680	II. 1750	III. 2345

a	R50,60	R70,80	R90,45	R110,70	R130,90
b = 15% van a	R7,59	R10,62	I. R13,57	II. R16,61	III. R19,64

5.2 Write down the number sentences and show all the calculations.

a) Increase 58 by 12%.

$\frac{12}{100}$ X 58 = 6,96   OF $\frac{112}{100}$ X 58 = 64,96   (100 + 12)

58 + 6,96 = 64,96

b) Decrease 120 by 15%.

$\frac{15}{100}$ X 120 = 18   OF $\frac{85}{100}$ X 120 = 102   (100 − 15)

120 − 18 = 102

c) Calculate the % profit if a cupboard of R380 is sold for R420.

R420 − R380 = R40

$\frac{40}{380}$ X 100 = 10,5% PROFIT

d) Calculate the % loss if the cupboard of R380 is sold for R250.

R380 − R250 = R130

$\frac{130}{380}$ X 100 = 34% LOSS

5.3 Complete the table.

PURCHASE PRICE	SELL PRICE	**R** PROFIT / LOSS	% PROFIT / LOSS
R6 430	R5 880	R550 LOSS	8,6%
R620	R790	R170 PROFIT	27,4%
R4 800	R6 000	R1 200 PROFIT	25%
R8 310	R8 000	R310 LOSS	3,7%
R2 315	R3 550	R1 235 PROFIT	53,3%

5.4 Complete the table. Write the fractions in its simplest form.

FRACTION	DECIMAL	%
$\frac{45}{100}$	0,45	45%
$\frac{6}{100}$	0,06	6%
$\frac{125}{100}$	1,25	125%