Name: Answer Key Class: _____

Chapter Quiz: Arithmetic on decimals, fractions and percentages

A. Simple problems

The suggested time allocated for **Question 1 to 4 is 10 minutes**.

1. Calculate the following:

$\frac{1}{12} - \frac{2}{12} + \frac{3}{12}$

$= \frac{1+3-2}{12}$

$= \frac{2}{12} = \frac{1}{6}$

2. Write the following as fractions in their simplest form:

a. 0.479

$= \frac{479}{1000}$

b. 3.4

$= 3\frac{4}{10}$

$= 3\frac{2}{5}$

3. Convert the following fractions to decimals:

a. $\frac{293}{1000}$

$= 0.293$

b. $8\frac{2}{5}$

$= 8\frac{4}{10}$

$= 8.4$

4. Convert the following numbers into percentages:

a. 0.52

$= 0.52 \times 100\%$

$= 52\%$

b. $67\frac{5}{8}$

$= 67.625 \times 100\%$

$= 6762.5\%$

B. More complex problems

The suggested time allocated for **Question 5 to 7 is 10 minutes**.

Calculate question 4 and 5 and show your working clearly (including column form):

5.

a.

$$\begin{array}{r} 3.6 \\ \times\ 1.7 \\ \hline 360 \\ 252 \\ \hline 6.12 \end{array}$$

→ 1dp
→ 1dp
⇓
→ 2dp

b. $\frac{2}{7} \div \frac{3}{7}$

$= \frac{2}{7} \times \frac{7}{3}$

$= \frac{2}{3}$

6. Convert $\frac{2}{3}$ into a recurring decimal.

$\frac{2}{3}$

$= 0.\dot{6}$

Calculation

0.66...
3)2
18
20
18
2...

7. Arrange the following in ascending order (from smallest to largest). Show your workings clearly.

0.63	$\frac{61}{1000}$	630%	0.5	$\frac{62}{100}$ $= \frac{62}{100}$
	$61 \div 1000$	$630 \div 100$		
0.63	$= 0.061$	$= 6.3$	0.5	$= 0.62$

~~$\frac{61}{1000}$ < $\frac{62}{100}$ < 0.63 < 0.5 <~~ ______

$\frac{61}{1000} < 0.5 < \frac{62}{100} < 0.63 < 630\%$

Name: ________________( ) Class: ______

C. Challenging problems

The suggested time allocated for **Question 8 to 10 is 12 minutes**.

Solve the problem and show your working clearly.

8. 75.75 ÷ 2.5

= 75.75 × 10 ÷ 2.5 × 10

= 757.5 ÷ 25

= 30.3

Calculation

30.3
25) 757.5
75
75
75

9. Mary has a piece of timber that is 3.6 meters long and she divides it into 0.25m pieces. How many pieces will she have? How many meters of timber does she have left over?

3.6m ÷ 0.25m
= 360 ÷ 25
= 14 R 0.1
She will have 14 pieces of timber and 0.1 m of timber is left over.

14
25) 360
25
110
100
0.10

10. Enoch earned $360,000 last year. He use 15% of the amount to pay his children's school fee and $\frac{1}{3}$ of the remainder was needed to pay his home loan. How much did Enoch have left?

Enoch used for children school fee:
360000 × 15% = 54000
Money remain after pay school fee:
360000 − 54000 = 306000
Money used for home loan:
306000 × $\frac{1}{3}$ = 102000
Money left for Enoch
306000 − 102000
= $204000

Method 2:
$360000 \times (1-15\%) \times (1-\frac{1}{3})$
$= 360000 \times 85\% \times \frac{2}{3}$
$= 1200 \times \frac{85}{100} \times \frac{2}{3}$
= 204000
Enoch has $204000 left.

D. Unfamiliar problems

The suggested time allocated for **Question 11 is 8 minutes**.

11. A family of four total 100 years in age. The parent's ages combine to be 0.8 of this total. The wife is only 60% of the husband's age. The children are 0.2 of the total with the oldest child being $\frac{7}{10}$ of this. How old are the four people in this family? (Show your workings and reasoning clearly and logically.)

Father x

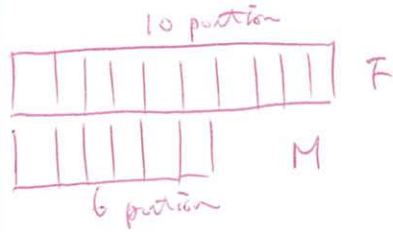
Mother $0.6x$ 0.8×100

Oldest child $\frac{7}{10}x$

younger $\frac{3}{10}x$ 0.2×100

Father + mother

$= 0.8 \times 100 = 80$



16 portion = 80

each portion = 5

∴ Father is

5×10

$= 50$

Mother is

5×6

$= 30$

Older child's age

$100 \times 0.2 \times \frac{7}{10}$

$= 14$

Younger child's age

$100 \times 0.2 \times \frac{3}{10}$

$= 6$

Husband: 50 years old,

Wife: 30 years old

Older child: 14 years old

Younger Child: 6 years old

~ The End ~