Dear Parents / Students

Due to the unprecedented situation, Knowledgeplus Training center is mobilized and will keep accompanying and supporting our students through this difficult time. Our Staff will be continuously, sending notes and exercises on a weekly basis through what's app and email. Students are requested to copy the notes and do the exercises on their copybooks. The answers to the questions below will be made available on our website on knowledgeplus.mu/support.php. Please note that these are extra work and notes that we are providing our students and all classes will be replaced during the winter vacation. We thank you for your trust and are convinced that, together, we will overcome these troubled times.

Knowledgeplus Training Center

Mathematics

Garde 7

Week 5

Notes and Exercise

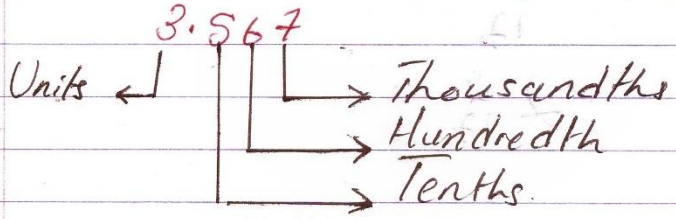
Note:(All the Notes, Examples and Exercise are on the photos and Note:(Please copy all the Notes, Examples and Exercises on your copy book).

Mathematics Grade 7 week 5

Decimals.

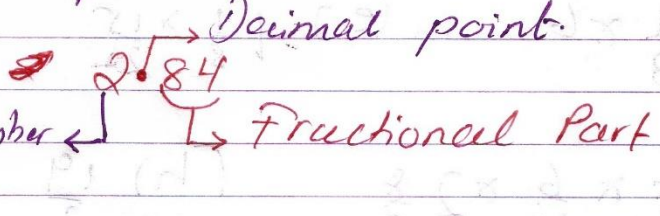
We often use decimal numbers in our everyday lives, such as when dealing with money and in measurements of lenght, mass, time and so on.

Decimal system



Definition

A decimal number consists of a whole number part a decimal point and a fractional part.



Converting fractions to decimals.

Fractions whose denominators are powers of 10.

Example

Convert the following into decimals.

(a) $\frac{9}{1000}$ (b) $\frac{191}{100}$

Converting fractions to decimals

Fractions whose denominators are powers of 10

Example

$\frac{3}{10}, \frac{3}{100}, \frac{3}{1000}, \frac{3}{10000}$

$\frac{3}{10} = 0.3$ (1) → start from here

$\frac{3}{100} = 0.03$ (1 2) → start from here

$\frac{3}{10000} = 0.0003$ (1 2 3 4) → start from here

$\frac{3}{1000} = 0.003$ (1 2 3) → start from here

Note: Whenever you devide by a dinominator you ~~start~~ should start from left. and count how many zero are there.

Convert the following into decimals.

(a) $\frac{191}{100}$ (b) $\frac{13}{10}$, $\frac{9}{1000}$

Solution

(a) $\frac{191}{100} = 1.91$ (2 zeros, 2 decimal places)

(b) $\frac{13}{10} = 1.3$ (1 zero, 1 decimal place)

(c) $\frac{9}{1000} = 0.009$ (3 zeros, 3 decimal places)

Fractions whose denominators can be expressed as powers of 10.

Example

Convert the following to a decimal

(a) $\frac{3}{4}$ (b) $\frac{5}{8}$

Solution

(a) $\frac{3}{4}$ Note: $\frac{5}{8}$ mean 3 divided by 4

$$4\overline{)3.00}$$

$$0.75$$

$\therefore$ 28 in 30 we got 28 which mean 7 when we devide by 4

$\therefore \frac{3}{4} = 0.75$

(b) $\frac{5}{8}$

$\therefore 8\overline{)5.^{5}0^{2}0^{4}0}$
0.625

$\therefore \frac{5}{8} = 0.625$

~~Example~~
~~Convert the following to a decimal~~

Example
Express the following mixed numbers as decimals.

(a) $2\frac{3}{10}$ (b) $1\frac{1}{4}$

Solution

(a) $2\frac{3}{10} = \frac{23}{10}$ Recal on example of fraction of week 4.
$= 2.3$

(b) $1\frac{1}{4} = ~~1.25~~ \frac{5}{4}$ Note $\frac{1}{4} = 0.25$
$= 1.25$ $\frac{5}{4} = 5 \times \frac{1}{4}$

Convert each of the following into a fraction in its lowest term:

Example
Convert each of the following into a fraction in its lowest term:
(a) 0·18 (b) 2·38

Solution

(a) $0{\cdot}18 = \frac{18}{100} = \frac{9}{50}$

(b) $2{\cdot}38 = 2\frac{38}{100}$

$= 2\frac{19}{50}$

Remember = when there is three figure is must divide by 100 for example $(\overset{1}{0}{\cdot}\overset{23}{18})$

= when four figure divide by 1000

= when 2 figure divide by 10.

Exercise: Ex2 (a-h), Ex3(a-e), Ex4(a-j)

2. Convert the following decimals into fractions, giving your answers in the lowest term.

(a) 0.39	(b) 0.75	(c) 0.4	(d) 0.36	(e) 0.412
(f) 0.02	(g) 0.04	(h) 0.032	(i) 0.65	(j) 0.0925

3. Express each of the following decimals as a mixed number in its lowest term.

(a) 2.4	(b) 7.05	(c) 6.03	(d) 11.40	(e) 5.55

4. Express the following as decimals.

(a) $\frac{8}{10}$	(b) $\frac{47}{100}$	(c) $\frac{215}{10}$	(d) $\frac{25}{1\,000}$	(e) $\frac{17}{200}$
(f) $\frac{22}{5}$	(g) $\frac{7}{25}$	(h) $2\frac{7}{10}$	(i) $4\frac{1}{5}$	(j) $9\frac{7}{8}$

Addition and Subtraction

Example

Evaluate (a) 12.43 + 4.687

(b) 45.043 − 28.21

Solution (a)

$$\begin{array}{r} 12.430 \\ 4.687 \\ \hline 17.117 \end{array} \quad + \qquad \begin{array}{r} 3\ {}^{9}\!\!\not{4}\ {}^{10}\!\!\not{5}.043 \\ 28.210 \\ \hline 16.843 \end{array} \quad -$$

(b)

Note: When we add or subtract two or more decimal numbers, we need to place the numbers in the correct place value column. The decimal points need to be aligned one under the other.

Exercise:Ex1(a-h), Ex2(a-h), Ex3(a-e).

1. Find the value of

   (a) 3.6 + 4.2 (b) 2.53 + 1.24 (c) 55.75 + 56.4 (d) 31.7 + 21.005

   (e) 205.5 + 41.47 (f) 13.12 + 27.6 (g) 0.0053 + 1.049 (h) 125.01 + 15.5 + 2.7

2. Evaluate

   (a) 6.4 – 2.2 (b) 4.89 – 2.25 (c) 12.64 – 8.3 (d) 11.47 – 9.521

   (e) 8.004 – 6.563 (f) 0.432 – 0.041 (g) 1.65 – 0.391 (h) 103.4 – 64.27

3. Evaluate

   (a) 5.55 + 4.2 – 6.34 (b) 12.45 + 0.321 – 2.516 (c) 8.214 – 3.028 + 5.141

   (d) 13.2 – 7.11 + 8.221 (e) 2.397 – 4.215 + 7.233 (f) 21.07 – 11.18 + 42.02

Multiplication of Decimal Numbers

Multiplication of a decimal number by power by powers of 10

Example

Calculate:

(a) 1.56×10 (b) 0.00327×1000

(a) $1.56 \times 10 = 1.56$
$= 15.6$

(b) $0.00327 \times 1000 = 0.00327$
$= 3.27$

Note: When multiplying a decimal number by (i) 10, the decimal point moves 1 digit to the right

(ii) 100 the decimal point moves 2 digit to the right

(iii) 1000 the decimal point moves 3 digit to the right

Most important it all depends on how many zero there ~~in~~ is in the number to number to multiply with.

Multiplication of a decimal number by a whole number

Example

Calculate 0.56×50

Solution

$0.56 \times 50 = 0.56 \times 10 \times 5$ Method 1
$= 5.6 \times 5$
$= 28$

Method 2

$0.56 \times 50 = 28$

0.56×50 ~~Do not take consideration~~

Note: 1st multiply it using Normal multiplication

2nd count after decimal point how many number there is. In this case there are 4 number.

0.56×50
$0\,0$
$28\,0\,0$
2800

4

Exercise:Ex1(a-h), Ex2(a-h), Ex3(a-h).

1. Calculate:

   (a) 0.3×10 (b) 1.21×10 (c) 4.06×1000 (d) 0.7×100

   (e) $3.452 \times 1\,000$ (f) 30.7×100 (g) 0.143×100 (h) 21.7×100

2. Calculate:

   (a) 0.4×8 (b) 0.27×3 (c) 2.4×12 (d) 0.07×25

   (e) 0.42×30 (f) 0.7×50 (g) 6.72×16 (h) $1.5 \times 2\,000$

3. Calculate:

   (a) 0.2×0.6 (b) 0.32×0.9 (c) 2.25×1.3 (d) 1.72×2.1

   (e) 52.3×0.2 (f) 2.31×2.9 (g) 0.042×7.3 (h) 0.86×2.52

Division of decimal numbers.

Division of a decimal number by power of 10

Example

Calculate (a) $283.31 \div 100$ (b) $7350.2 \div 1000$

Solution

(a) $283.31 \div 100 = 283.31$ (2 1)

$= 2.8331$

(b) $7350.2 \div 1000 = 7350.2$ (3 2 1)

$= 7.350$

Note: When divided a decimal number by

(i) 10, the decimal point moves 1 digit to the left

(ii) 100, the decimal point moves 2 digit to the left

(iii) 1000, the decimal point moves 3 digit to the left

Same as multiplication it depends on the know many zero the number have and Remember left is for division and right ✱ is for multiplication

Division of a decimal number by a whole number

Example.

Calculate : $1.2 \div 4$

Solution

$1.2 \div 4 =$

$4 \overline{)1.2}$

0.3

$\therefore 1.2 \div 4 = 0.3$

Division of a decimal number by another decimal number

Example

Calculate : $4.8 \div 0.2$

Solution

$4.8 \div 0.2 = \frac{4.8}{0.2}$

$= \frac{48}{2}$

$= 24$

Decimal point should be removed completely from both numerator and denominator

it should move to the right to remove it for example.

0.568 = 568

The decimal point should be ~~at the at the~~ behind the last number of the decimal number

Exercise:Ex1(a-h), Ex2(a-f), Ex3(a-f), Ex4(a-f).

1. Calculate:

(a) 2.9 ÷ 10 (b) 5.2 ÷ 100 (c) 0.347 ÷ 10 (d) 5.9 ÷ 1 000

(e) 12.53 ÷ 100 (f) 99.7 ÷ 10 (g) 646.1 ÷ 100 (h) 0.0025 ÷ 100

2. Calculate:

(a) 3.6 ÷ 9 (b) 0.42 ÷ 7 (c) 16.5 ÷ 5

(d) 248.2 ÷ 2 (e) 33.9 ÷ 3 (f) 256.8 ÷ 32

3. Calculate:

(a) 7.2 ÷ 60 (b) 242.8 ÷ 20 (c) 55.22 ÷ 11

(d) 0.0345 ÷ 50 (e) 0.216 ÷ 16 (f) 42.12 ÷ 12

4. Calculate:

(a) 3.8 ÷ 0.2 (b) 0.234 ÷ 0.3 (c) 0.0012 ÷ 0.6

(d) 156.3 ÷ 0.6 (e) 745.5 ÷ 1.5 (f) 0.07 ÷ 0.0028