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P.5 MATHS LESSON NOTES WEEK 1 PHASE TWO

LESSON 1

Writing expanded decimals in short forms

Examples

1. What number has been expanded to give;
   40+7+0.9+0.03+0.006

   40.000
   7.000
   0.900
   0.030
   + 0.006
   47.936

2. Write $(6x10^1) + (8x10^0) + (9x10^{-1}) + (7x10^{-2})$ in its short form
   $(6x10^1) + (8x10^0) + (9x10^{-1}) + (7X10^{-2})$
   $6x10 + 8x1 + 9x{}^1/_{10} + 7x{}^1/_{10}{}^2$
   $60+8 +{}^9/_{10} + 7x\ {}^1/_{10 \times 10}$
   $60 + 8 + 0.9 + {}^7/_{100}$
   60 + 8 + 0.9 + 0.07
   60.00
   8.00
   0.90
   + 0.07
   68.97

Exercise

Write the following in their short forms

1. 0.2+0.07
2. 0.9 + 0.06
3. 0.6 + 0.05 + 0.008
4. 2 + 0.004
5. 400 + 70 + 2 + -.8
6. $(2x10^{-1}) + (8x10^{-2})$
7. 90 + 8 + 0.07 + 0.005
8. $(4x10^{-1}) + (9x10^{-2}) + (6x10^{-3})$

LESSON 2

Converting common (Rational) fractions to decimals

Examples

1. $\frac{2}{1} = 1\overline{)2}$ (quotient 2)

   $2 \times 1 = -2$

   0

2. $\frac{1}{5} = 5\overline{)10}$ (quotient 0.2)

   $2 \times 5 = -10$

   - -

   $\frac{1}{5} = 0.2$

3. $^{3}/_{10} = 10\overline{)30}$ (quotient 0.3)

   $3 \times 10 = -30$

   - -

   $^{3}/_{10} = 0.3$

4. $^{25}/_{10} = 10\overline{)25}$ (quotient 2.5)

   $2 \times 10 = -20$

   50

   $5 \times 10 = -50$

   $^{25}/_{10} = 2.5$

Exercise

Express the following rational /vulgar fractions as decimals.

1. $^{8}/_{1}$
2. $^{4}/_{10}$
3. $^{3}/_{100}$
4. $^{659}/_{1}$
5. $^{15}/_{100}$
6. $^{625}/_{10}$
7. $^{5}/_{1000}$
8. $^{429}/_{1000}$
9. $^{25}/_{100}$
10. $^{12}/_{10}$
11. $^{8}/_{1000}$
12. $^{74}/_{1000}$

LESS0N 3

Converting mixed fractions to decimals

Examples Using $\frac{(DXW)+N}{D}$

1. $3\ ^{2}/_{10}$

$$\frac{(10 \times 3) + 2}{10} = \frac{30 + 2}{10} = \frac{32}{10} = 3.2$$

$$\begin{array}{r} 3.2 \\ 10 \overline{)\ 32} \\ 3x10 = \underline{-30} \\ 20 \\ 2x10 = \underline{-\ 20} \end{array}$$

2. $7\ \frac{15}{100}$ or $\frac{DxW+N}{D}$

$$\frac{100 \times 7 + 15}{100} = \frac{700 + 15}{100} = \frac{715}{100}$$

$$\begin{array}{r} 7.15 \\ 100 \overline{)\ 715} \\ 7 \times 100 = \underline{700} \\ 150 \\ 1 \times 100 = \underline{-\ 100} \\ 500 \\ 5 \times 100 = \underline{-\ 500} \\ - - - \end{array}$$

Exercise

Express the following mixed fractions as decimals

1. **3** $\frac{1}{10}$
2. **3** $\frac{3}{10}$
3. **4** $\frac{7}{100}$
4. **12** $\frac{3}{10}$
5. **39** $\frac{5}{10}$
6. **7** $\frac{13}{100}$
7. **13** $\frac{6}{10}$
8. **3** $\frac{4}{100}$
9. **23** $\frac{9}{10}$
10. **7** $\frac{5}{100}$

LESSON 4

Converting decimals to common fractions

Examples

1. 0.9

   0.9 = $^{9}/_{10}$

2. 6.7 = $^{67}/_{10}$ = $6\ ^{7}/_{10}$

3. 7.08

   7.08 = $^{708}/_{100}$= $7\ ^{8}/_{100}$ = $7\ ^{2}/_{25}$

Exercise

Express the following as common fractions and reduce where necessary

1. 0.6
2. 4.7
3. 14.9
4. 9.65
5. 1.25
6. 0.46
7. 5.5
8. 0.625

LESSON 5

Ordering decimal fractions

Using LCM

Examples

1. Arrange 0.2, 2.2. 0.22, 0.22 from the smallest (in ascending order)

   N.B Change the decimals into common fractions.

$^{2}/_{10}$, $^{22}/_{10}$, $^{22}/_{100}$, $^{202}/_{1000}$ LCM = 1000

100	100	10	1
$2 \times \frac{1000}{10}$	$22 \times \frac{1000}{10}$	$22 \times \frac{1000}{100}$	$202 \times \frac{1000}{1000}$
1	1	1	1
2x100	22x100	22x10	202x1
200	2200	220	202
1st	4th	3rd	2nd

From smallest = 0.2, 0.202, 0.22, 2.2

2. Arrange 0.1, 1.1, 0.11 in descending order (from the biggest)

1/10, 11/10, 11/100 LCM= 100

$1/\cancel{10} \times \frac{\cancel{100}^{10}}{1}$ $\frac{11}{\cancel{10}} \times \frac{\cancel{100}^{10}}{1}$ $\frac{11}{\cancel{100}} \times \frac{\cancel{100}^{1}}{1}$

1x10 11x10 11x1

10 110 11

3rd 1st 2nd

1.1 0.11 0.1

Exercise

Arrange the decimals as instructed in brackets

1. 0.1, 0.3, 0.33, (from smallest)
2. 2.2, 0.22, 0.02 (from biggest)
3. 0.009, 0.9, 0.009 (in descending order)
4. 0.3, 0.07, 0.15 (from smallest)
5. 7.7, 0.77, 0.11. (in ascending order)
6. 0.08, 0.8, 0.34 (from biggest)