Year 4 Term 1 Homework

Student Name: _____	**Grade**: _____
Date: _____	**Score**: _____

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1 Year 4 Term 1 Week 1 Homework

1.1 Whole Numbers

1.1.1 Roman Numerals

Roman Numerals were very popular about 2000 years ago. The Roman number system is based on the idea of **addition** and **subtraction**.

- When a smaller numeral appears before a large one, it is **subtracted** from the large one:

IV means 5 - 1 = 4

XL means 50 - 10 = 40

- When a smaller numeral appears after the larger one, it is **added** to the large one.

VI means 5 + 1 = 6

LX means 50 + 10 = 60

- By repeating a numeral, its value is repeated.

XX = 10 + 10 = 20

XXX = 10 + 10 + 10 = 30

- By placing a bar over the numeral, its value is increased by 1000 times (M = 1000).

$\overline{V}$	= 5000	$\overline{X}$	= 10,000
$\overline{L}$	= 50,000	$\overline{C}$	= 100,000
$\overline{D}$	= 500,000	$\overline{M}$	= 1,000,000

Example 1.1.1

1. *Change the Roman numerals into our own numerals:*

   (a) XXXIV = 10 + 10 + 10 + 4 = 34
   (b) CCXXVII = 100 + 100 + 10 + 10 + 7 = 227

2. *Change these Hindu-Arabic numerals into Roman numerals:*

   (a) 1256 = MCCLVI *(b) 214 = CCXIV* *(c) 2008 = MMVIII*

The table below gives more details of the Roman numeral system:

I 1	II 2	III 3	IV 4	V 5	VI 6	VII 7	VIII 8	IX 9
X 10	XX 20	XXX 30	XL 40	L 50	LX 60	LXX 70	LXXX 80	XC 90
C 100	CC 200	CCC 300	CD 400	D 500	DC 600	DCC 700	DCCC 800	CM 900
M 1000								

Exercise 1.1.1

1. *Change the Roman numerals into our own numerals:*

   (a) XXVII = _____

   (b) LXXIV = _____

   (c) CCLXXXVII = _____

   (d) DLIV = _____

   (e) MDXLIV = _____

   (f) CMXCIX = _____

2. *Change these Hindu-Arabic numerals into Roman numerals:*

   (a) 94 = _____

   (b) 372 = _____

   (c) 926 = _____

   (d) 409 = _____

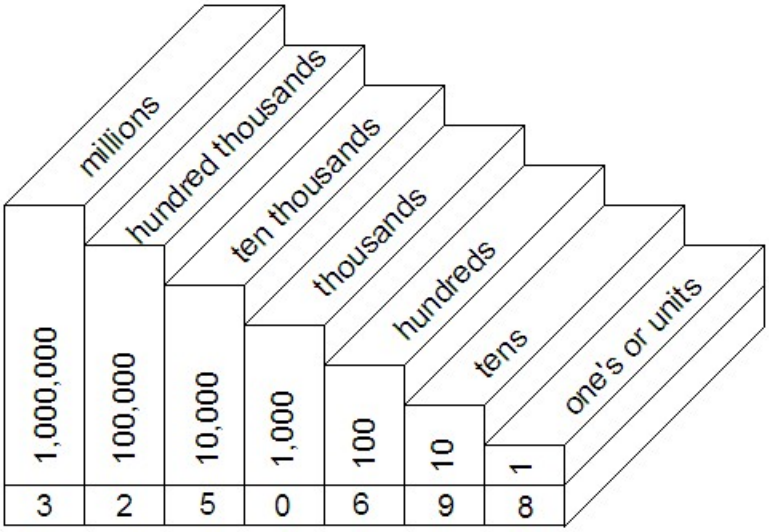
   (e) 1007 = _____

   (f) 2468 = _____

1.1.2 Place Value

Our number system today is based on the Hindu-Arabic system where the value of a number is determined by its place in a particular column as shown in the example below.

Example 1.1.2 What is the value of 2 and 6 in the numeral 3,250,698?



- *The place value of 2 is 200,000 or two hundred thousand.*
- *The place value of 6 is 600 or six hundred.*

Exercise 1.1.2 What is the value of 3 in the following numbers?

1. *12743* _____
2. *25327* _____
3. *23708* _____
4. *302984* _____
5. *9232901* _____
6. *3200987* _____
7. *234508* _____
8. *120039* _____

1.1.3 Four Notations

There are four ways or notations of describing a whole number:

1. **As an ordinary numeral:** 3,250,698.
2. **In words:**
   Three million, two hundred and fifty thousand, six hundred and ninety eight.
3. **In expanded notation:**
   $(3 \times 1,000,000) + (2 \times 100,000) + (5 \times 10,000) + (6 \times 100) + (9 \times 10) + (8 \times 1)$
4. **In exponential notation:**
   $(3 \times 10^6) + (2 \times 10^5) + (5 \times 10^4) + (6 \times 10^2) + (9 \times 10^1) + (8 \times 10^0)$

Exercise 1.1.3

1. *Write the following numbers in words:*
   - *(a) 1,234* _____
   - *(b) 10,609* _____
   - *(c) 20,359* _____
   - *(d) 537,209* _____
2. *Write the following numbers in expanded notation.*
   - *(a) 2,345 =* _____
   - *(b) 10,483 =* _____
   - *(c) 200,482 =* _____
   - *(d) 6,200,345 =* _____
3. *Write the following numbers in exponential notation:*
   - *(a) 3,124 =* _____
   - *(b) 62,389 =* _____
   - *(c) 12,034 =* _____
   - *(d) 430,156 =* _____

1.1.4 Rounding Off

Exercise 1.1.4

1. *Round off the following numbers to the nearest 10:*

   (a) *1234 =* _____

   (b) *3405 =* _____

   (c) *1004 =* _____

   (d) *1996 =* _____

2. *Round off the following numbers to the nearest 100:*

   (a) *1898 =* _____

   (b) *1054 =* _____

   (c) *1009 =* _____

   (d) *8946 =* _____

3. *Round off the following numbers to the nearest 1000:*

   (a) *1369 =* _____

   (b) *2456 =* _____

   (c) *1898 =* _____

   (d) *1098 =* _____

4. *Evaluate the following expressions and round off to the nearest 100:*

   (a) $234 + 18 + 1096 + 208 =$ _____

   (b) $2974 + 102 - 37 + 604 =$ _____

   (c) $1028 + 64 + 120 - 102 =$ _____

   (d) $325 \times 12 + 207 =$ _____

1.1.5 The Four Operations ($+, -, \times$ and $\div$)

Exercise 1.1.5

1. *Evaluate the following additions:*

   (a) $1234 + 405 + 20456 =$ _____

   (b) $7213 + 68 + 856 + 4 + 1305 =$ _____

   (c) $8012 + 23 + 305 + 18 =$ _____

   (d) $327 + 96 + 409 + 1003 =$ _____

2. *Evaluate the following subtractions:*

   (a) $6000 - 2369 =$ _____

   (b) $3406 - 1097 =$ _____

   (c) $1203 - 394 =$ _____

   (d) $3914 - 1825 =$ _____

3. *Evaluate the following multiplications:*

   (a) $102 \times 35 =$ _____

   (b) $145 \times 17 =$ _____

   (c) $490 \times 18 =$ _____

   (d) $209 \times 103 =$ _____

4. *Evaluate the following divisions:*

   (a) $817 \div 19 =$ _____

   (b) $1140 \div 15 =$ _____

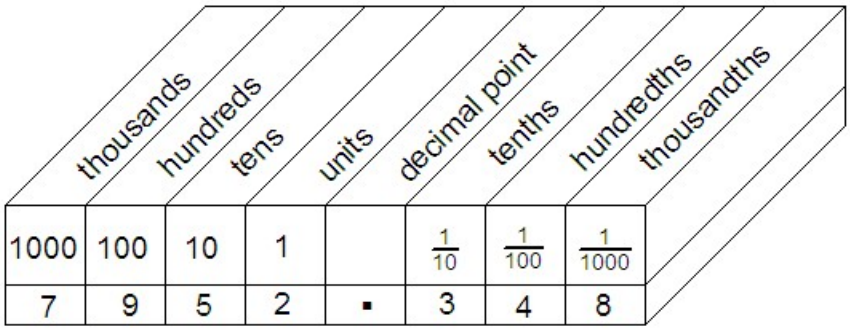
   (c) $486 \div 18 =$ _____

   (d) $1008 \div 14 =$ _____

1.2 Decimals

1.2.1 Place Value

The numbers to the left of the decimal point have exactly the same place values as in the set of whole numbers. While the numbers to the right of the decimal point have special place value shown below:



Example 1.2.1 What is the place value of each digit to the right of the decimal point in the number 7952.348?

- *The place value of 3 is 3 lots of* $\frac{1}{10} = 3 \times \frac{1}{10} = \frac{3}{10}$ *or* ***3 tenths****.*
- *The place value of 4 is 4 lots of* $\frac{1}{100} = 4 \times \frac{1}{100} = \frac{4}{100}$ *or* ***4 hundredths****.*
- *The place value of 8 is 8 lots of* $\frac{1}{1000} = 8 \times \frac{1}{1000} = \frac{8}{1000}$ *or* ***8 thousandths****.*

Exercise 1.2.1 What is the place value of 5 in each of these numbers?

1. *23.957* _____
2. *92.503* _____
3. *28.125* _____
4. *25.102* _____
5. *10.205* _____
6. *52.203* _____
7. *125.18* _____
8. *12.252* _____

1.2.2 Ordering Decimal Numbers

Example 1.2.2

1. *Order the following numbers from greatest to least: 13.3, 13.03, 13, and 13.33*
   Solution:
   $13.3 = 13.30 = 13 + \frac{30}{100}$

   $13.03 = 13 + \frac{3}{100}$

   $13 = 13.00 = 13 + \frac{0}{100}$

   $13.33 = 13 + \frac{33}{100}$

   Therefore the order from greatest to least is: 13.33, 13.3, 13.03, 13.

2. *Five boys ran in a final of 100 m school sprint and recorded the following times in seconds: 13.27, 13.07, 12.95 13.73 and 13.7. order the times from the least to the greatest.*
   Solution:
   $13.27 = 13 + \frac{27}{100}$

   $13.07 = 13 + \frac{7}{100}$

   $12.95 = 12 + \frac{95}{100}$

   $13.73 = 13 + \frac{73}{100}$

   $13.7 = 13 + \frac{70}{100}$

   Therefore the order from least (fastest) to greatest (slowest) is:

   12.95, 13.07, 13.27, 13.7, 13.73

Exercise 1.2.2

1. *Order the following numbers from greatest to least:*

   (a) 1.02, 1.022, 1.202 and 1.002 _____

   (b) 10.01, 10.11, 10.1 and 10.02 _____

2. *Order the following numbers from least to greatest:*

   (a) 4.2, 4.02, 4.22 and 4.12 _____

   (b) 0.25, 0.4, 0.125 and 0.215 _____

1.3 Fractions

1.3.1 Equivalent Fractions

① $\frac{2}{8} = \frac{\quad}{64} = \frac{4}{\quad}$

② $\frac{2}{4} = \frac{\quad}{32} = \frac{8}{\quad}$

③ $\frac{4}{8} = \frac{\quad}{56} = \frac{32}{\quad}$

④ $\frac{1}{2} = \frac{\quad}{12} = \frac{2}{\quad}$

⑤ $\frac{4}{7} = \frac{16}{\quad} = \frac{\quad}{42}$

⑥ $\frac{2}{5} = \frac{\quad}{50} = \frac{18}{\quad}$

⑦ $\frac{6}{8} = \frac{60}{\quad} = \frac{\quad}{24}$

⑧ $\frac{1}{6} = \frac{10}{\quad} = \frac{\quad}{54}$

⑨ $\frac{4}{5} = \frac{\quad}{20} = \frac{28}{\quad}$

⑩ $\frac{2}{3} = \frac{10}{\quad} = \frac{\quad}{18}$

⑪ $\frac{1}{5} = \frac{\quad}{40} = \frac{4}{\quad}$

⑫ $\frac{2}{7} = \frac{18}{\quad} = \frac{\quad}{56}$

⑬ $\frac{1}{3} = \frac{3}{\quad} = \frac{\quad}{27}$

⑭ $\frac{5}{6} = \frac{25}{\quad} = \frac{\quad}{48}$

⑮ $\frac{1}{4} = \frac{\quad}{32} = \frac{3}{\quad}$

⑯ $\frac{4}{6} = \frac{24}{\quad} = \frac{\quad}{12}$

⑰ $\frac{3}{5} = \frac{\quad}{15} = \frac{12}{\quad}$

⑱ $\frac{2}{6} = \frac{16}{\quad} = \frac{\quad}{54}$

⑲ $\frac{3}{8} = \frac{15}{\quad} = \frac{\quad}{64}$

⑳ $\frac{6}{7} = \frac{60}{\quad} = \frac{\quad}{63}$

Score:

1.3.2 Simplifying Fractions

① $\frac{3}{9} =$ _____ ② $\frac{2}{4} =$ _____

③ $\frac{30}{50} =$ _____ ④ $\frac{27}{36} =$ _____

⑤ $\frac{8}{32} =$ _____ ⑥ $\frac{10}{50} =$ _____

⑦ $\frac{12}{18} =$ _____ ⑧ $\frac{12}{24} =$ _____

⑨ $\frac{40}{50} =$ _____ ⑩ $\frac{10}{20} =$ _____

⑪ $\frac{35}{42} =$ _____ ⑫ $\frac{16}{24} =$ _____

⑬ $\frac{8}{24} =$ _____ ⑭ $\frac{6}{15} =$ _____

⑮ $\frac{24}{48} =$ _____ ⑯ $\frac{5}{30} =$ _____

⑰ $\frac{16}{24} =$ _____ ⑱ $\frac{3}{6} =$ _____

⑲ $\frac{6}{12} =$ _____ ⑳ $\frac{9}{18} =$ _____

Score:

1.4 Across Downs

1

19	+	15	+	5	=	
+		+		+		+
8	+	13	+	14	=	
+		+		+		+
24	+	5	+	9	=	
=		=		=		=
	+		+		=	

2

40	-	13	-	7	=	
-		-		-		-
18	-	1	-	4	=	
-		-		-		-
5	-	3	-	1	=	
=		=		=		=
	-		-		=	

3

21	-	6	+	18	=	
-		+		-		+
6	+	4	-	9	=	
+		-		+		+
12	-	1	+	27	=	
=		=		=		=
	+		+		=	

4

24	-	10	+	16	=	
-		+		-		+
10	+	30	-	6	=	
+		-		+		+
11	-	1	+	27	=	
=		=		=		=
	+		+		=	

1.5 Quiz 1

Question 1. Write the following in Hindu-Arabic numerals: . . . . . *(3 points)*

(a) DXVII = _____ [1]

(b) CCCLXII = _____ [1]

(c) CDXLIX = _____ [1]

Question 2. Write in Roman numerals: . . . . . *(3 points)*

(a) 920 = _____ [1]

(b) 704 = _____ [1]

(c) 1205 = _____ [1]

Question 3. What is the place value of 3 in the following numbers: . . . . . *(3 points)*

(a) 2345 = _____ [1]

(b) 2003 = _____ [1]

(c) 3690 = _____ [1]

Question 4. Write the following numbers in expanded notation: . . . . . *(6 points)*

(a) 723 = _____ [2]

(b) 3412 = _____ [2]

(c) 4927 = _____ [2]

Question 5. Write the following in exponential notation: . . . . . *(12 points)*

(a) $6 \times 6 \times 6 =$ _____ [2]

(b) $2 \times 2 \times 2 \times 2 =$ _____ [2]

(c) $10000 =$ _____ [2]

(d) $3000 =$ _____ [2]

(e) $20463 =$ _____ [2]

(f) $532089 =$ _____ [2]

Question 6. Round off the following numbers to the nearest 10: . . . . . (*5 points)*

(a) 1045 = _____ [1]

(b) 2395 = _____ [1]

(c) 1950 = _____ [1]

(d) 39095 = _____ [1]

(e) 12305 = _____ [1]

Question 7. Round off the following numbers to the nearest 100: . . . . . (*5 points)*

(a) 2345 = _____ [1]

(b) 3456 = _____ [1]

(c) 2905 = _____ [1]

(d) 20973 = _____ [1]

(e) 97654 = _____ [1]

Question 8. Round off the following number to the nearest 1000: . . . . . (*5 points)*

(a) 971 = _____ [1]

(b) 3406 = _____ [1]

(c) 2544 = _____ [1]

(d) 39256 = _____ [1]

(e) 38947 = _____ [1]

Question 9. Evaluate the following expressions: . . . . . (*10 points)*

(a) $12 + 8 \div 2 + 6 - 9 =$ _____ [2]

(b) $(12 - 4) \div (7 - 5) =$ _____ [2]

(c) $(6 + 4) \times (6 - 4) =$ _____ [2]

(d) $8 \times 7 - (18 - 8 \div 2) =$ _____ [2]

(e) $98 - (15 \div 3) + (45 \div 9) \times 2 =$ _____ [2]

Question 10. Find the answers to the following: ..... *(18 points)*

(a) The quotient of a number and four is 5. Find the number. [2]

(b) Decrease the quotient of 18 and 3 by 4. [2]

(c) Increase the product of 15 and 7 by 7. [2]

(d) The product of 7 and 9 is decreased by the quotient of 6 and 3. [2]

(e) 6 times the square of 2 is increased by the difference of 7 and 2. [2]

(f) The average of 3 numbers is 6. A fourth number is added to the total, and the new average is 8. What is the fourth number? [2]

(g) Decrease 13.73 by 5.7. [2]

(h) The product of 8.25 and 5. [2]

(i) Increase 16.8 by 6.4 and subtract the result from 28. [2]

Question 11. Simplifying the following fractions: ..... (*12 points*)

(a) $\frac{24}{36}$ = _____ [2]

(b) $\frac{7}{84}$ = _____ [2]

(c) $\frac{9}{108}$ = _____ [2]

(d) $\frac{128}{256}$ = _____ [2]

(e) $\frac{24}{168}$ = _____ [2]

(f) $\frac{124}{12}$ = _____ [2]

Question 12. Find the Equivalent Fractions of the following: ..... (*12 points*)

(a) $\frac{12}{48} = \frac{\boxed{?}}{12}$ = _____ [2]

(b) $\frac{27}{45} = \frac{\boxed{?}}{5}$ = _____ [2]

(c) $\frac{6}{10} = \frac{\boxed{?}}{30}$ = _____ [2]

(d) $\frac{10}{25} = \frac{2}{\boxed{?}}$ = _____ [2]

(e) $\frac{7}{12} = \frac{\boxed{?}}{24}$ = _____ [2]

(f) $\frac{32}{36} = \frac{8}{\boxed{?}}$ = _____ [2]

Question 13. Problem solving: ..... (*6 points*)

(a) A movie started at 6:15 pm and finished at 8:38 pm. Find the running time for the movie. [2]

(b) At the school's athletic carnival, Mike and John entered the high jump competition. Mike jumped 1.03 m, while John jumped 5 cm lower. What height did John jump? [2]

(c) The 28 students in our class read an average of three books in a month. How many books were read in total in a year? [2]