

Year 7 Term 1 Homework

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

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2 Year 7 Term 1 Week 2 Homework

2.1 Beginnings in Number

2.1.1 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:

	thousands	hundreds	tens	units	decimal point	tenths	hundredths	thousandths
1000	100	10	1		$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$	
7	9	5	2	.	3	4	8	

Example 2.1.1 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 2.1.1 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 = _____

Exercise 2.1.2 Rounding Off

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

(a) $2458 =$ _____

(b) $89954 =$ _____

(c) $29096 =$ _____

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

(a) $52903 =$ _____

(b) $64952 =$ _____

(c) $97960 =$ _____

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

(a) $395072 =$ _____

(b) $290835 =$ _____

(c) $429652 =$ _____

4. Round off the following numbers to the nearest 10th:

(a) $52.355 =$ _____

(b) $24.963 =$ _____

(c) $0.0356 =$ _____

5. Round off the following numbers to the nearest 100th:

(a) $42.936 =$ _____

(b) $98.343 =$ _____

(c) $0.2956 =$ _____

Exercise 2.1.3 Ordering Decimal Numbers

1. Which of the following four numbers is the smallest?

A. 1.2

B. 1.02

C. 1.12

D. 1.21

2. Which of the following four numbers is the largest?

A. 15.5

B. 15.05

C. 15.15

D. 15.51

3. Arrange these numbers in decreasing order of size: 4.91, 4.091, 4.901 and 4.019.

2.1.2 Powers of Numbers**Exercise 2.1.4 Write each of these expressions in index form.**

1. six to the power of five = _____

2. two factors of eleven = _____

3. four cubed = _____

4. two times eight squared = _____

Exercise 2.1.5 Evaluate the following expressions.

1. $3 \times 7^2 + 4 \times 6^3 =$ _____

2. $2^6 \div 6^2 =$ _____

3. $5^3 \times 6^0 + 12 =$ _____

4. $(2 \times 5)^3 \div 10^2 =$ _____

2.1.3 Expanded Notation**Exercise 2.1.6 Write the basic numeral for each of the following.**

1. $(2 \times 100,000) + (4 \times 10,000) + (6 \times 100) + (3 \times 10)$ _____

2. $(1 \times 1,000,000) + (3 \times 100,000) + (5 \times 10,000) + (8 \times 1000) + (8 \times 10)$ _____

3. $(8 \times 10000) + (5 \times 100) + (6 \times 10) + (4 \times 1)$ _____

4. $(6 \times 1,000,000) + (1 \times 10,000) + (7 \times 1000) + (4 \times 100) + (9 \times 10) + (8 \times 1)$ _____

2.1.4 Exponential Notation**Exercise 2.1.7 Write the basic numeral for each following.**

1. $(8 \times 10^4) + (7 \times 10^2) + (3 \times 10^1) + (2 \times 10^0)$ _____

2. $(5 \times 10^6) + (4 \times 10^4) + (5 \times 10^3) + (8 \times 10^2) + (1 \times 10^1) + (4 \times 1)$ _____

3. $(6 \times 10^4) + (0 \times 10^3) + (0 \times 10^2) + (1 \times 10^1) + (9 \times 1)$ _____

4. $(7 \times 10^6) + (5 \times 10^5) + (6 \times 10^4) + (3 \times 10^2) + (9 \times 10^1) + (8 \times 1)$ _____

2.1.5 Order of Operations**Exercise 2.1.8 Evaluate each of the following expressions.**

1. $9 \times 5 - 7 \times 3 + 6 =$ _____

2. $110 + 12 \times 5 + 10 - 40 \div 8 =$ _____

3. $60 \div 12 + 13 + 8 \times 3 =$ _____

4. $84 \div 12 + 24 \div 4 \div 2 =$ _____

5. $84 \times 4 \div 2 + 36 \div 6 + 12 =$ _____

6. $64 \div 8 \times 2 - 32 \div 8 + 8 =$ _____

7. $7 \times 3^2 - 5 \times 2^3 =$ _____

8. $12^2 \div 2^3 + 3^3 \times 5^2 =$ _____

2.1.6 Properties of Cardinal Numbers

- **Cardinal Numbers** are the counting numbers 1, 2, 3, 4, 5, . .
- **The Commutative Laws** for addition and multiplication state that the order of the numbers can be interchanged without affecting the answer.

For example: $3 + 9 = 9 + 3$ and $3 \times 7 = 7 \times 3$.

- **The Associative Laws** of addition and multiplication state that the numbers can be grouped in different ways without changing the answer.

For example: $(4 + 6) + 8 = 4 + (6 + 8)$ and $(2 \times 4) \times 6 = 2 \times (4 \times 6)$

- **The Distributive Law** is a method of expanding expressions involved grouping symbols.

For example: $2 \times (3 + 7) = (2 \times 3) + (2 \times 7) = 6 + 14 = 20$

Exercise 2.1.9 Complete each of these expressions, then evaluate them.

1. $5 \times 4 + 5 \times 8 = 5(\text{_____} + \text{_____}) =$ _____

2. $14 \times 12 - 14 \times 9 = 14(\text{_____} - \text{_____}) =$ _____

3. *9 lots of 4 and 5 lots of 5 =* _____

2.2 Problem Solving

Exercise 2.2.1

1. Adam has \$80 more than Bob. If Bob gives Adam \$30, the amount of money Adam will be thrice than of Bob's. How much money has each of them at first?

2. In a topic test, the number of passes is 108 more than the number of failures. If 36 more students pass the test, the number of passes will be 10 times the number of failures. Find the total number of students who took the test.

3. If the distance between every two fence posts is 2 metres. Find the number of posts needed to build a fence around an equilateral triangle with sides of 60 metres.

4. If Mrs Lee multiplies her 3 children's ages together she gets 490. If she adds their ages together she gets 24. If her two youngest children are twins, what are the ages of her kids?

2.3 Diagnostic Test

Question 1 (20 marks)

Evaluate the following expressions:

(a) $6^3 \div 18 + 3 \times 2^4$ [4]

(a) _____

(b) $4 \times 6 - (18 + 12 \div 4)$ [4]

(b) _____

(c) $82 - (28 \div 4) \times 3 + 5$ [4]

(c) _____

(d) $60 - (40 - 56 \div 8) + 15$ [4]

(d) _____

(e) $\frac{30+(7 \times 8)}{15+(7 \times 4)}$ [4]

(e) _____

Question 2 (6 marks)

Write the basic numeral for each of these:

(a) $(7 \times 100000) + (4 \times 1000) + (8 \times 100) + (2 \times 1)$ [3]

(a) _____

(b) $(4 \times 10^5) + (8 \times 10^4) + (9 \times 10^1) + (2 \times 10^0)$ [3]

(b) _____

Question 3 (15 marks)

Write the basic numeral for each of these:

(a) Fifteen thousand and two hundred and thirteen [5]

(a) _____

(b) One hundred and forty-eight thousand nine hundred and twenty-five [5]

(b) _____

(c) Twelve million and twenty-four thousand four hundred and eighty [5]

(c) _____

Question 4 (15 marks)

Write these Roman numerals as Hindu-Arabic numerals:

(a) $CDXCVIII$ [5]

(a) _____

(b) $\bar{X}\bar{V}$ [5]

(b) _____

(c) $M\bar{V}XCIX$ [5]

(c) _____

Question 5 (12 marks)

Round off the number 24972.945:

(a) to the nearest hundred [3]

(a) _____

(b) to the nearest thousand [3]

(b) _____

(c) to the nearest tenth [3]

(c) _____

(d) to the nearest hundredth [3]

(d) _____

Question 6 (4 marks)

Find the average of the largest and smallest of these four numbers:

12.8, 18.2, 28.1 and 21.8.

6. _____

Question 7 (4 marks)

Subtract the smallest of these four numbers from the largest one:

1.49, 1.14, 1.04 and 1.94.

7. _____

Question 8 (4 marks)

Find the digit sum of 1958.

8. _____

Question 9 (4 marks)

Use the digits 1, 2, 3, and 4 once each to form two two-digit numbers with the largest possible product. What is this product?

Question 10 (10 marks)

For every question Mary answered correctly in a quiz, she scored 4 points. 1 point was deducted for each incorrect answer. For every 10 questions Mary answered 3 were wrong. She scored a total of 250 points in the quiz.

(a) How many questions did Mary answer altogether? [5]

(b) How many point less did she score because of the incorrect answers? [5]

Question 11 (6 marks)

Peter has 40 more marbles than Joe. If Joe gives Peter 20 marbles, Peter will have five times as many marbles as Joe. How many marbles has each boy at first?
