

Math Practice Sheets

Numeration Review



Student Name

Examples

Practice Questions

Extra Challenge Unit

Example

Period	Billions	Millions	Thousands	Units
Value Name	Hundred-Billion 100,000,000,000	Ten-Billion 10,000,000,000	Billion 1,000,000,000	Hundred-Million 100,000,000
		Ten-Million 10,000,000	Million 1,000,000	Hundred-Thousand 100,000
			Ten-Thousand 10,000	Thousand 1,000
				Hundred 100
				Tens 10
				Ones 1
96,680,270,204 (Standard form)	90,000,000,000 + 6,000,000,000 + 600,000,000 + 80,000,000 + 200,000 + 70,000 + 200 + 4 (Expanded form)			
	Ninety-six billion, six-hundred eighty million, two hundred seventy thousand, and two hundred four (Word form)			

Exercise

1. Write each of the following numbers in standard form.
 - a) $4,000,000 + 600,000 + 200 + 50 + 7$
 - b) $500,000,000,000 + 8,000,000 + 30,000 + 600 + 9$
 - c) $20,000,000 + 700,000 + 40 + 1$
 - d) Ninety two million, four hundred fifty-seven thousand
 - e) Forty five billion, three hundred seventy million, two thousand, and nine hundred
 - f) One hundred seventy-six billion, eighteen thousand, and four

Exercise

2. Write each of the following numbers in expanded form.

a) $6,540,203,678 =$

b) $751,418,339 =$

c) $987,654,321,500 =$

3. Write the following numbers in standard form.

a) Fourteen million, four hundred fifty-seven thousand, eight hundred, and four

b) Two billion, six hundred million, fifty one thousand, two hundred, and ninety-nine

c) Eight hundred thirty-two million, five hundred seventy-one thousand, and five hundred

4. Write the place value of the circled digits.

Number	Place value	Number	Place value
6,345,201,256		9,876,543	
56,045,132,750		403,421,489	

5. Circle the digit with given place value.

Number	Place value	Number	Place value
29,924,529,200	900,000,000	56,657,656,700	600,000
81,181,831	1,000,000	313,070,573	300,000,000

Example

Period	Millions			Thousands			Units		
Value Name	Hundred Million 100,000,000	Ten Million 10,000,000	Million 1,000,000	Hundred Thousand 100,000	Ten Thousand 10,000	Thousand 1,000	Hundred 100	Ten 10	Ones 1

1 = 1 one

10 ones = 1 ten

10 tens = 100 ones = 1 hundred

10 hundreds = 1,000 ones = 1 thousand

10 thousand = 10,000 ones = 1 ten thousand

10 ten thousand = 100,000 ones = 1 hundred thousand

10 hundred thousand = 1,000,000 ones = 1 million

Exercise

1. Convert each of the following to the requested place values.

a) 500 = _____ tens = _____ hundreds

b) 900 = _____ ones = _____ hundreds

c) 4,000 = _____ tens = _____ thousands

d) 7,000 = _____ tens = _____ thousands

e) 6,000 = _____ ones = _____ tens

Exercise

f) 20,000 = _____ hundreds = _____ thousands

g) 80,000 = _____ hundreds = _____ thousands

h) 300,000 = _____ hundreds = _____ thousands

i) 900,000 = _____ hundreds = _____ thousands

j) 400,000 = _____ hundreds = _____ thousands

k) 5,000,000 = _____ ten-thousands = _____ millions

l) 7,000,000 = _____ ten-thousands = _____ millions

m) 6,000,000 = _____ ten-thousands = _____ millions

n) 20,000,000 = _____ millions = _____ ten-millions

o) 40,000,000 = _____ millions = _____ ten-millions

p) 90,000,000 = _____ millions = _____ ten-millions

Exercise

Solve the problems below.

2. How many tens and how many hundreds are there in 700?

3. There are 500,000 workers in a town. How many hundred workers are in the town?

4. 4 ten thousands means
 - a) 4,000 ones
 - b) 400 hundreds
 - c) 40 hundreds
 - d) 40 thousands

5. Write the smallest number of 8 digits. How many commas did you include?

6. You know that 1,000 milliliters is equal to 1 liter. Express 5,678 liters in milliliters.

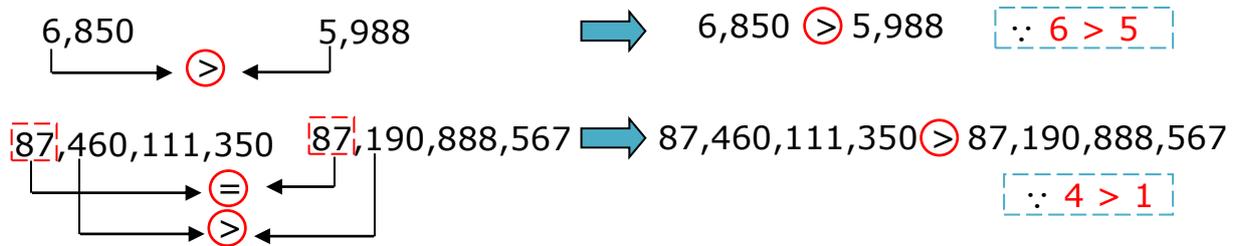
Example

Let us learn to compare numbers.

Step I: The number having more digits represents the greater number.

i.e. $987,456,189 < 3,000,125,000$ ($3,000,125,000$ has 10 digits)

Step II: When two numbers which have the same number of digits are compared, we start comparing the digits from the left. i.e.



Exercise

1. Fill in the blanks using '<', '>', or '='.

a) 67,250



9,867

b) 867,439



1,234,500

c) 41,653,000



41,635,000

d) 790,852,150



790,852,150

e) 16,578,913,200



16,579,813,200

f) 6,504,302,876



6,502,932,678

g) 178,456,123,800



178,456,123,900

h) 45,601,789,000



45,610,789,000

Exercise

Solve the problems below.

2. Neptune is 4,498,252,900 km from the sun. Write any three other numbers that are greater than 4,498,252 but less than 5,000,000.

3. The projected population of Tokyo, Japan is 26,400,000 and Bombay, India is 26,100,000 in 2015. Which city, of the two, will have the least population in 2015?

4. Which one of the following shows the set of numbers correctly ordered from greatest to least?
 - a) 12,547 12,549 12,945 b) 12,945 12,547 12,549
 - c) 12,945 12,549 12,547 d) 12,549 12,547 12,545

5. Sara says 11,111,111,111 is the greatest eleven-digit number. Find her mistake and write the greatest eleven-digit number.

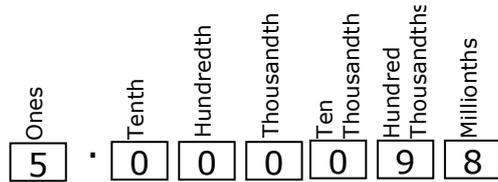
6. Order the following numbers from greatest to least.

20,400,000 23,200,000 20,900,000

Example

You can express a decimal number using a place value chart.

i.e. 5.000098 can be shown as follows.

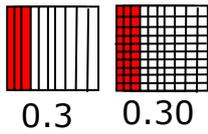


Standard form: 5.000098

Expanded form: $5 + 0.00009 + 0.000008$

Word form: five and ninety-eight millionths

Note that equivalent decimals are different names for the same amount.



Each model shows the same amount shaded. So, 0.3 and 0.30 are equivalent.

Ones		Tenths	Hundredths
0	.	3	
0	.	3	0

The decimals are equivalent because each has a 3 in the tenths place and nothing in the hundredths place.

Exercise

1. Write each of the following in standard form.

a)

$$2 + 0.5 + 0.007 + 0.0001$$

b)

$$0.006 + 0.0009 + 0.00003$$

c)

Three and forty-one hundredths

d)

Nine and five hundred thousandths

e)

$$0.08 + 0.002 + 0.001 + 0.0007$$

f)

$$6 + 0.1 + 0.04 + 0.006$$

Exercise

2. Write the word form for the following decimal numbers. Also, write the value of the circled digit.

a) 4.0(6)78

b) 6.(2)0154

c) 9.137(5)

d) 8.00(0)08

e) 7.(1)00000

f) 1.8790(4)

3. Write any two equivalent decimals for each of the following.

a) 6.10

b) 0.70

c) 1.80

d) 2.4

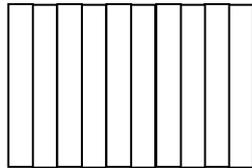
e) 3.5000

f) 5.55

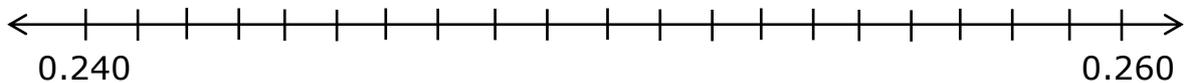
Exercise

Solve the problems below.

4. The average temperature of Dallas is 85.9°F . Write 85.9 in word form.
5. Shade the given model to show 0.8 and write any two equivalent decimals.



6. The value of 7 in 25.479 is
- a) 7 thousands b) 7 hundredths
- c) 7 tenths d) 7 tens
7. Martin says 8.51 and 8.510 are equivalent. Mary says they are not equivalent. Who is correct and why?
8. Show 0.247 on the number line below.



Example

To compare decimal numbers, check the digits in the same decimal places starting from the rightmost position that has digits. The number with greater digit in the rightmost position is larger than the other number.

$$2.082 \quad ? \quad 2.035$$

Comparing whole numbers, $2 = 2$

Comparing digits in the tenths places, $0 = 0$

Comparing digits in the hundredths places, $8 > 3$

$$\therefore 2.082 > 2.035$$

We can order decimal numbers in ascending order or descending order.

i.e. $0.574 \quad 0.504 \quad 0.547$

From least to greatest (ascending order): $0.504, 0.547, 0.574$

From greatest to least (descending order): $0.574, 0.547, 0.504$

Exercise

1. Compare using '<', '>', or '='.

a) $3.782 \quad \bigcirc \quad 3.872$

b) $1.40 \quad \bigcirc \quad 1.400$

c) $9.145 \quad \bigcirc \quad 8.999$

d) $5.287 \quad \bigcirc \quad 5.290$

e) $0.765 \quad \bigcirc \quad 0.7650$

f) $2.701 \quad \bigcirc \quad 2.7$

g) $4.020 \quad \bigcirc \quad 4.002$

h) $0.9820 \quad \bigcirc \quad 0.9901$

i) $6.005 \quad \bigcirc \quad 6.0050$

j) $8.123 \quad \bigcirc \quad 8.321$

Exercise

Solve the problems below.

2. Order the following numbers from least to greatest. Put them in order in the box below.

4.536 4.653 4.356 4.650

3. John wants to order the given numbers from greatest to least. Complete his work.

7.901 7.109 7.910 7.019

4. The length of the American cockroach is 3.576 centimeters. Which one of the following is greater than 3.576?

a) 3.575

b) 3.578

c) 3.499

d) 3.508

5. Write any two numbers that is greater than 0.345 but less than 1.345.

6. The length of an Australian cockroach is 3.582 centimeters and the length of an Oriental cockroach is 3.432 centimeters. Which cockroach is shorter?

Example

Read the decimal number pattern chart.

0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20
0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30
0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.40
0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49	0.50

Exercise

1. Complete the following grids.

a)

		0.24		
--	--	------	--	--

b)

0.38

c)

0.66

d)

			0.82	
--	--	--	------	--

e)

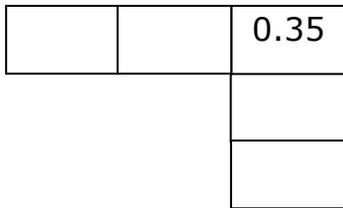
		0.17		
--	--	------	--	--

f)

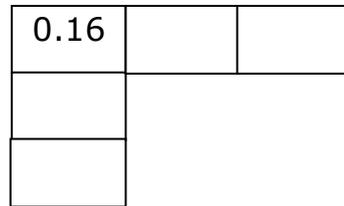
0.45

Exercise

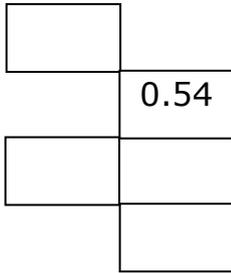
g)



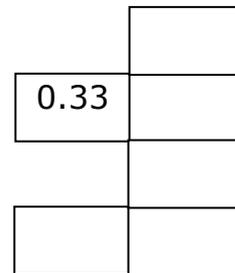
h)



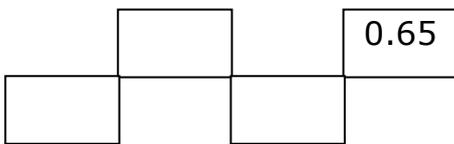
i)



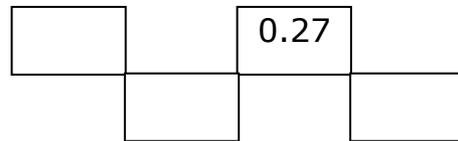
j)



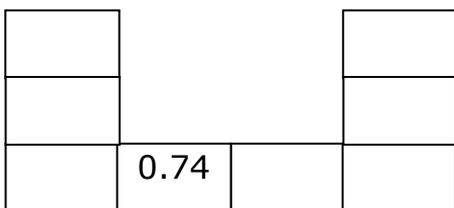
k)



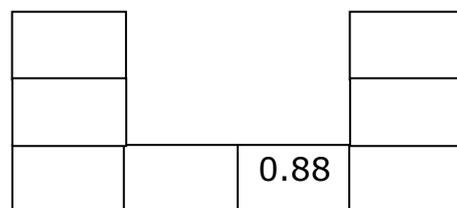
l)



m)



n)



Exercise

Solve the problems below.

2. Write the next three numbers.

0.002 0.003 0.004 _____ _____ _____

3. Keenan drew a grid of five cells in a row and put 0.83 in the middle. Complete his work.

		0.83		
--	--	------	--	--

4. A decimal number between 0.42 and 0.50 is

- | | |
|---------|---------|
| a) 0.64 | b) 0.51 |
| c) 0.46 | d) 0.24 |

5. Complete the following grid and explain the patterns.

<table border="1" style="margin: auto;"> <tr><td style="padding: 5px;">0.33</td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px; text-align: center;">0.64</td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> </table>	0.33					0.64			<hr/> <hr/> <hr/> <hr/> <hr/>
0.33									
	0.64								

Example

Sometimes we have to work with very large numbers. For example: The population of the earth and the weight of the earth are such numbers.

The weight of the earth is approximately 6,600,000,000,000,000,000 tons.

It is difficult to remember, isn't it?
We can express it as 6.6×10^{21} tons.

Similarly, the distance from the sun to the moon is 1,600,000,000,000 meters. We can express it as 1.6×10^{12} km.

Thus when a large number is in the form $a \times 10^n$, where $1 \leq a < 10$ and n is a whole number, the number is expressed in scientific notation.

Exercise

1. Write the following numbers in scientific notation.

a) 43,000,000,000,000

b) 1,410,000,000,000

c) 100,000,000,000,000

d) 732 Million

e) 45 Billion

f) 289 Billion

Exercise

2. Write the following in the usual form.
- a) 2×10^5
 - b) 15×10^8
 - c) 4.03×10^8
 - d) 3.8×10^7
 - e) 0.7×10^{15}
3. Rewrite each number, in the following descriptions, in scientific notation.
- a) The area of Asia is 42,700,000 square km.
 - b) The distance from Mars to the earth is 66,600,000,000 meters.
 - c) The distance from Jupiter to the sun is 778 million km.
 - d) The distance from the moon to the earth is 380,000,000 meters.

Exercise

Solve the problems below.

4. The projected population of Mexico City, Mexico in 2015 is 19,000,000. Write this number in scientific notation.

5. China had 111,000,000 internet users in 2006. Express this number in scientific notation.

6. 2.7×10^{13} is same as
 - a) 270,000,000,000
 - b) 27,000,000,000
 - c) 2,700,000,000,000
 - d) 27,000,000,000,000

7. Express 38×10^{15} in the usual form.

8. Hugo says 345 million is 3.45×10^7 . Is he correct? If not write correctly.

Exercise

1. What is the largest number of ten digits? Write it in expanded form and in word form.
2. Spain had 38,646,800 cells phone users in 2006. What will this number be after an increase of 20,000,000 users? After a decrease of 10,000,000 users?
3. Write the largest and the smallest numbers of seven digits. Also write any three numbers between these two numbers.
4. Draw a number line to show 0.789.

Exercise

5. Explain how you can write two numbers between 0.345 and 2.345.
6. Complete the following grid and explain the pattern.

	0.47

7. Why you can't write 5,500,000,000,000,000,000 in scientific notation as 55×10^{20} ? Explain.
8. The weight of an electron is 0.00,000,000,000,000,000,000,000,000,091 grams. In scientific notation this number will be written as
- a) 9.1×10^{-30} b) 9.1×10^{-31}
- c) 9.1×10^{30} d) 9.1×10^{31}

Congratulations!

You have finished a lesson. You should be very proud of yourself.

Now it is time to progress to the next lesson.

Your next assignment is notated by a green arrow.

Lesson 1 Numeration Review

Lesson 2 Add and Subtract Whole Numbers and Decimals Part I

Unit 2.1 Mental Math on Addition and Subtraction

Unit 2.2 Addition and Subtraction Problem Solving

Unit 2.3 Addition Properties

Unit 2.4 Rounding Whole Numbers and Decimals

Unit 2.5 Estimating Sums and Differences

Unit 2.6 Math Challenges

Lesson 3 Add and Subtract Whole Numbers and Decimals Part II

Lesson 4 Multiplying Whole Numbers Part I

Review 1 Review of Lesson 1, 2, 3, and 4

Lesson 5 Multiplying Whole Numbers Part II

Lesson 6 Division: 1-Digit Divisor

Lesson 7 Division: 2-Digit Divisor

Lesson 8 Variables and Expressions

Review 2 Review of Lesson 5, 6, 7, and 8

Lesson 9 Multiplying and Dividing Decimals Part I

Lesson 10 Multiplying and Dividing Decimals Part II

Lesson 11 Shapes

Lesson 12 Fractions Part I

Review 3 Review of Lesson 9, 10, 11, and 12

Lesson 13 Fractions Part II

Lesson 14 Fraction and Mixed Numbers Operation Part I

Lesson 15 Fraction and Mixed Numbers Operation Part II

Lesson 16 Perimeter and Area

Review 4 Review of Lesson 13, 14, 15, and 16

Lesson 17 Shapes and Solids Part I

Lesson 18 Shapes and Solids Part II

Lesson 19 Measurement Units, Time, and Temperature Part I

Lesson 20 Measurement Units, Time, and Temperature Part II

Review 5 Review of Lesson 17, 18, 19, and 20

Lesson 21 Solving Equations

Lesson 22 Ratio, Percent, and Proportion

Lesson 23 Equations and Graphs Part I

Lesson 24 Equations and Graphs Part II

Review 6 Review of Lesson 21, 22, 23, and 24

Lesson 25 Graphs and Data

Lesson 26 Transformation, Congruence, and Symmetry

Lesson 27 Probability

Review of Lesson 1 to 14

Review of Lesson 15 to 27



Unit 1.1

- a) 4,600,257 b) 500,008,030,609 c) 20,700,041 d) 92,457,000
e) 45,370,002,900 f) 176,000,018,004
 - a) $6,000,000,000+500,000,000+40,000,000+200,000+3,000+600+70+8$
b) $700,000,000+50,000,000+1,000,000+400,000+10,000+8,000+300+30+9$
c) $900,000,000,000+80,000,000,000+7,000,000,000+600,000,000+50,000,000+$
 $4,000,000+300,000+20,000+1,000+500$
 - a) 14,457,804 b) 2,600,051,299 c) 832,571,500
 - 300,000,000; 50,000,000,000; 800,000; 400,000
 - $100,000,000+60,000,000+6,000,000+200,000+40,000+1,000$
 - 82,400,000,000 sq km
 - d
 - One million, two hundred thirty-two thousand and three hundred
 - 213,824,428
-

Unit 1.2

- a) 50; 5 b) 900; 9 c) 400; 4 d) 700; 7
e) 6,000; 600 f) 200; 20 g) 800; 80 h) 3,000; 300
i) 9,000; 900 j) 4,000; 400 k) 500; 5 l) 700; 7
m) 600; 6 n) 20; 2 o) 40; 4 p) 90; 9
 - 70; 7
 - 5,000
 - b and d
 - 10,000,000; 2
 - 5,678,000 milliliters
-

Unit 1.3

- a) > b) < c) > d) = e) < f) >
g) < h) <
 - Bombay
 - d
 - 99,999,999,999
 - 23,200,000; 20,900,000; 20,400,000
-

Unit 1.4

- a) 2.5071 b) 0.00693 c) 3.041 d) 9.00005 e) 0.0837 f) 6.146
 - a) Hundredth b) Tenth c) Ten-thousandth d) Thousandth
e) Tenth f) Hundred thousandth
 - Eighty-five and nine tenth
 - b
 - Martin
-

Unit 1.5

- a) < b) = c) > d) < e) = f) >
g) > h) < i) = j) <
 - 4.356; 4.536; 4.650; 4.653
 - 7.910; 7.901; 7.109, 7.019
 - b
 - Oriental cockroach
-

Unit 1.6

- a) 0.22,0.23,0.24,0.25,0.26 b) 0.18,0.28,0.38,0.48 c) 0.56,0.76,0.86
d) 0.79,0.80,0.81,0.82,0.82,0.83 e) 0.15,0.16,0.17,0.18,0.19
f) 0.45,0.55,0.65,0.75 g) 0.33,0.34,0.35,0.45,0.55
h) 0.16,0.17,0.18,0.26,0.36 i) 0.43,0.54,0.63,0.74
j) 0.24,0.33,0.44,0.53 k) 0.72,0.63,0.74,0.65
l) 0.25,0.36,0.27,0.38 m) 0.53,0.63,0.73,0.74,0.75,0.76,0.66,0.56
n) 0.66,0.76,0.86,0.87,0.86,0.89,0.79,0.69
 - 0.005,0.006,0.007
 - 0.81,0.82,0.83,0.84,0.85
 - c
-

Unit 1.7

- a) 4.3×10^{13} b) 1.41×10^{12} c) 10^{14}
d) 7.32×10^8 e) 4.5×10^{10} f) 2.89×10^{11}
 - a) 200,000 b) 1,500,000,000 c) 403,000,000
d) 38,000,000 e) 70,000,000,000,000
 - a) 4.27×10^7 b) 6.66×10^{10} c) 7.78×10^8
d) 3.8×10^8
 - 1.9×10^7
 - 1.11×10^8
 - d
 - 38,000,000,000,000,000
 - no; 3.45×10^8
-

Unit 1.8

- 9,999,999,999
 - 58,646,800; 28,646,800
 - 9,999,999; 1,000,000
 - b
-