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Reading, Writing and Ordering Numbers

Name: _____ Date: _____

Concepts

- Approximation and Rounding a Number
- Ascending and Descending Order
- Decimal Notation
- Decomposing Numbers
- Digits and Numbers
- Expressing Numbers Using Different Types of Notation
- Number Positions and Values (theory)
- Number Systems
- Ordering Decimal Numbers
- Writing Numbers (theory)

Approximation and Rounding a Number

1. A snow-clearing crew fills in its log at the end of a night shift. Round each reading as asked.

a) The truck covered 47 382 m. Round to the nearest thousand metres.

b) It spread 0.4675 t of abrasive. Round to the nearest hundredth of a tonne.

c) The last street took 12.96 min. Round to the nearest tenth of a minute.

d) It burned 38.5 L of diesel. Round to the nearest ten litres.

Ascending and Descending Order

2. A weather station recorded six temperatures, in °C:

$$-3, \qquad 2.5, \qquad -1.2, \qquad \tfrac{1}{2}, \qquad \tfrac{9}{4}, \qquad -0.75$$

a) Write them in ascending order.

b) Write them in descending order.

c) Which reading is closest to $0\,°\text{C}$?

Decimal Notation

3. Write each quantity in decimal notation.

a) eight units and six hundredths

b) $\tfrac{3}{4}$ of a litre

c) $\dfrac{17}{1000}$

d) $6 + \dfrac{2}{10} + \dfrac{9}{1000}$

Decomposing Numbers

4. Follow the model $438 = 4 \times 100 + 3 \times 10 + 8 \times 1$.

a) Decompose $7\,046$.

b) Decompose 52.83.

c) Rebuild the number described by $9 \times 1000 + 4 \times 10 + 6 \times \frac{1}{100}$.

Digits and Numbers

5.

a) How many digits are used to write $4\,077$? How many *different* digits?

b) In $58\,124$, which digit occupies the hundreds position, and what is its value?

c) Marc says: "0 is a digit, but it is not a number." Is he right? Answer in one or two sentences.

Expressing Numbers Using Different Types of Notation

6. Complete the table. Every number is positive, and fractions must be given in lowest terms.

Fractional notation	Decimal notation	Percentage
$\frac{3}{5}$		
	0.24	
		85%
$\frac{7}{8}$		

Number Positions and Values

7. Consider the number 2 607.058.

a) Name the position occupied by each digit that is not 0.

b) The digit 5 appears once. What is its value?

c) The number contains two 0s. Explain what each one is doing, and say what the number would become if you simply erased it.

Number Systems

8. Our number system is positional and works in base ten. The Roman system is additive, with a subtractive shortcut for numbers such as IV and IX.

a) Write 2 024 in Roman numerals.

b) Write the Roman numeral $MCDXLIX$ in our system.

c) In 772, the two 7s do not have the same value. Explain why that can never happen in the Roman system.

Ordering Decimal Numbers

9. Six times, in seconds, from a school swim meet:

$$31.8, \qquad 31.08, \qquad 30.9, \qquad 31.75, \qquad 30.85, \qquad 31.5$$

a) Rank the times from fastest to slowest.

b) Insert $<$ or $>$: $31.08 \square 31.8$ and $30.9 \square 30.85$.

c) Which time is closest to 31 s?

Writing Numbers

10.

a) Write 40 208 in words.

b) Write "sixty thousand five hundred nine" in figures.

c) Write 9.03 in words.

d) In a mathematics assignment, a student writes forty-two thousand as "42,000". Which convention should be used in Québec, and how should the number be written?

Synthesis — drawing on several sheets in this topic

11. Five students measured the same hallway and reported

$$12.4 \text{ m}, \qquad 12.35 \text{ m}, \qquad 12.5 \text{ m}, \qquad 12.44 \text{ m}, \qquad 12.6 \text{ m}.$$

a) Put the five measurements in ascending order.

b) Each student now rounds their own measurement to the nearest tenth of a metre. Give the five rounded values.

c) Three of the five reports become the same number. Explain how that happens, and say what is lost if the class orders the rounded values instead of the original ones.

Want the harder problems and the worked solutions?

The *Challenge Problems* set and the *Answer Keys* for Reading, Writing and Ordering Numbers — with the reasoning written out in full — are available at **tutorinmontreal.ca**.