1.1 Large and Small Numbers

Whole Numbers to One Million

Student Logbook

1. to discover how we use 10 to create very large numbers
2. 2; 6; 8
3. 10×1
4. 10×10 (also accept 100)
5. 10; 10; 10; 10
6. 1000 (also accept 1,000); one thousand
7. three; left
8. 1,000
9. 10000
10. ten thousand
11. 100000 (also accept 100,000); one hundred thousand
12. 1,000,000
13.

	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
10×1						1	0
10×10					1	0	0
10×100				1,	0	0	0
$10 \times 1{,}000$			1	0,	0	0	0
$10 \times 10{,}000$		1	0	0,	0	0	0
$10 \times 100{,}000$	1,	0	0	0,	0	0	0

14. 7; 5; 6
15. 100; 10; 1
16. 700; 50; 6; expanded
17. twelve thousand, fifty-nine

Your Turn

1. one hundred thousand
2. b. Ten hundred thousands
3. **a.** 100,000 **b.** 100 **c.** 10,000
4. **a.** $3 \times 100 + 9 \times 10 + 5 \times 1$
   b. $1 \times 1{,}000 + 4 \times 100 + 6 \times 10 + 0 \times 1$
   c. $8 \times 100{,}000 + 7 \times 10{,}000 + 0 \times 1{,}000 + 2 \times 100 + 0 \times 10 + 1 \times 1$
5. **a.** $70{,}000 + 800 + 10 + 3$
   b. $1{,}000{,}000 + 100{,}000 + 5{,}000 + 600 + 20 + 5$
   c. $9{,}000 + 400 + 60 + 6$
6. **a.** fifty-one
   b. two hundred seventy-one
   c. thirty-five thousand, eighty
   d. six hundred twenty-nine thousand
   e. one million, seventeen thousand, ninety-three
7. **a.**

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
		2	0,	3	2	0

   b. hundreds
   c. twenty thousand, three hundred twenty
   d. $2 \times 10{,}000 + 3 \times 100 + 2 \times 10$
   e. $20{,}000 + 300 + 20$

Ordering and Rounding Whole Numbers

Student Logbook

1. to investigate and compare large numbers
2. four million, fifty-six thousand, one hundred thirty-three
3. millions
4. hundred thousands
5. >
6. smaller; <
7. 2,129,836
8. scale
9. rounding
10. 4,778,000
11. smaller
12. ≈
13. halfway; larger
14. hundreds
15. right
    a. down; lesser **b.** up; greater

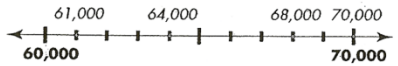
Your Turn

1. **a.**

	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
Maine	1,	2	5	3,	0	4	0
Idaho	1,	2	5	1,	7	0	0

   b. thousands **c.** Maine

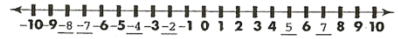
2. **a.** >; hundreds **b.** <; tens
   c. >; ten thousands **d.** <; hundreds
3. **a.** tens **b.** thousands
   c. hundred thousands **d.** hundreds
4. **a.** 3,500 **b.** 209,600
   c. 7,285,100 **d.** 800
5. **a.** 68,000 **b.** 64,000
   c. 61,000 **d.** 70,000



6. **a.** 16,400° F **b.** 16,000°F

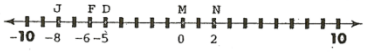
Negative Whole Numbers

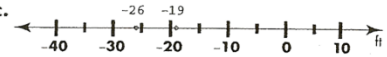
Student Logbook

1. to explore whole numbers less than zero
2. right
3. one
4. zero
5. positive; negative
6. +; −
7. 

8. Opposite; opposite
9. 0
10. positive; negative
11. positive; negative
12. 0
13. Temperature
14. negative; positive; above
15. positive; negative
16. above; below

Your Turn

1. **a.** 

   b. Nov. **c.** Jan.
2. **a.** > **b.** < **c.** =
   d. < **e.** > **f.** <
3. **a.** −620 **b.** −30
   c. −1,980 **d.** 0
4. **a.** −4,300 **b.** −900
   c. −12,100 **d.** −600
5. **a.** +17 or 17 **b.** −45
   c. −9 **d.** +230 or 230
6. zero; The sum of two opposites is 0. The only numbers you can add to get 0 is 0. So, 0 is its own opposite.
7. **a.** −19 **b.** −26
   c. 

   d. Wanda; Sea level is at 0. Wanda is only 19 feet below sea level. Mark is 7 feet lower than 19 feet, at 26 feet below sea level.

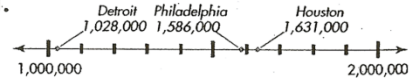
Unit Review

1. 100,000 = one hundred thousand; 10,000 = ten thousand; 1,000 = one thousand
2. **a.** ten thousands
   b. 20,000 + 9,000 + 30 + 5
   c. 2 × 10,000 + 9 × 1,000 + 0 × 100 + 3 × 10 + 5 × 1
   d. twenty-nine thousand, thirty-five
3. **a.** < **b.** hundreds **c.** 1,500; 1,800
4.

Mystery Number	Rounded to the Nearest Ten	Opposite of the Mystery Number
−132	−130	+132
1,572	1,570	−1,572
−29	−30	+29
−7	−10	+7

5. 40,000 + 6,000 + 100 + 50 + 8
6. **a.** North Dakota **b.** New Jersey
7. **a.** > **b.** >

Unit Assessment

1. 

2. **a.** Not possible; In 1990, the population of Detroit was less than Houston, They had the fourth greatest population. Therefore, it is *not possible* that Detroit had the second- largest population.
   b. Possible; The population of Houston was greater than that of Philadelphia. And since Houston had the fourth largest population, Philadelphia could have had the fifth largest population.

3. $1{,}631{,}000 > 1{,}586{,}000$ or $1{,}586{,}000 < 1{,}631{,}000$
4. -86
5. $-28 > -86$ or $-86 < -28$
6. Europe
7. Africa
8. **a.** 80; -80

   b. No; The numbers 80 and -80 are opposites. Opposite numbers are the same distance from zero. Therefore, the top of the cliff and the diver are at equal distances from the surface of the water.