

Gradely  
Model

Answer key



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# GRADE 4 • MODULE 1

## Place Value, Rounding, and Algorithms for Addition and Subtraction

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ANSWER KEY



Name \_\_\_\_\_

Date \_\_\_\_\_

1. Label the place value charts. Fill in the blanks to make the following statements true. Draw disks in the place value chart to show how you got your answer.

a.  $10 \times 4 \text{ ones} = \underline{40} \text{ ones} = \underline{4 \text{ tens}} = 40$

1000's	100's	10's	1's
		••••	••••

*(Handwritten: A red arrow labeled 'x10' points from the 1's column to the 10's column. The 4 disks in the 1's column are circled in red.)*

b.  $10 \times 2 \text{ tens} = \underline{20} \text{ tens} = \underline{200}$

1000's	100's	10's	1's
	••	••	

*(Handwritten: A red arrow labeled 'x10' points from the 10's column to the 100's column. The 2 disks in the 10's column are circled in red.)*

c.  $5 \text{ hundreds} \times 10 = \underline{50} \text{ hundreds} = \underline{5000}$

1000's	100's	10's	1's
•••••	•••••		

*(Handwritten: A red arrow labeled 'x10' points from the 100's column to the 1000's column. The 5 disks in the 100's column are circled in red.)*

2. Complete the following statements using your knowledge of place value:

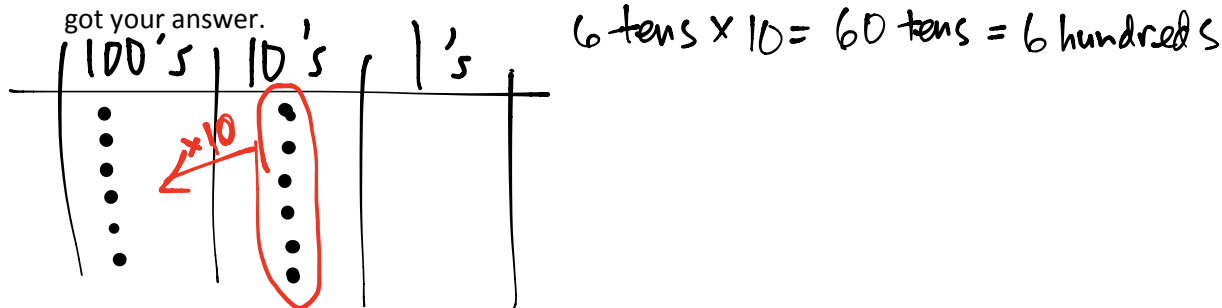
- a. 10 times as many as 1 hundred is 10 hundreds or 1 thousand.
- b. 10 times as many as 6 hundreds is 60 hundreds or 6 thousands.
- c. 10 times as many as 8 hundreds is 8 thousands.
- d. 40 hundreds is the same as 4 thousands.

Use pictures, numbers, and words to explain how you got your answer for Part (d).

1000's	100's	10's	1's
••••	••••••••		

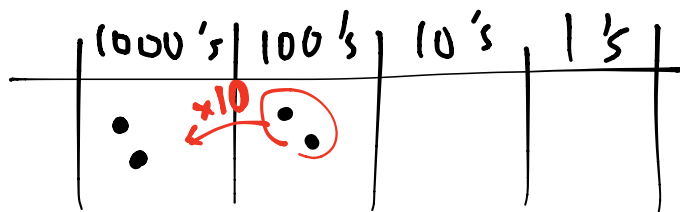
*(Handwritten: Four red arrows labeled 'x10' point from the 100's column to the 1000's column. The 40 disks in the 100's column are circled in red.)*

3. Katrina has 60 GB of storage on her tablet. Katrina’s father has 10 times as much storage on his computer. How much storage does Katrina’s father have? Use numbers and words to explain how you got your answer.



4. Katrina saved \$200 to purchase her tablet. Her father spent 10 times as much money to buy his new computer. How much did her father’s computer cost? Use numbers and words to explain how you got your answer.

$2 \text{ hundreds} \times 10 = 20 \text{ hundreds} = 2 \text{ thousands} = 2000$



5. Fill in the blanks to make the statements true.

- a. 4 times as much as 3 is 12.
- b. 10 times as much as 9 is 90.
- c. 700 is 10 times as much as 70.
- d. 8,000 is 10 times as much as 800.

6. Tomas’s grandfather is 100 years old. Tomas’s grandfather is 10 times as old. How old is Tomas?

Tomas is 10 yrs old.

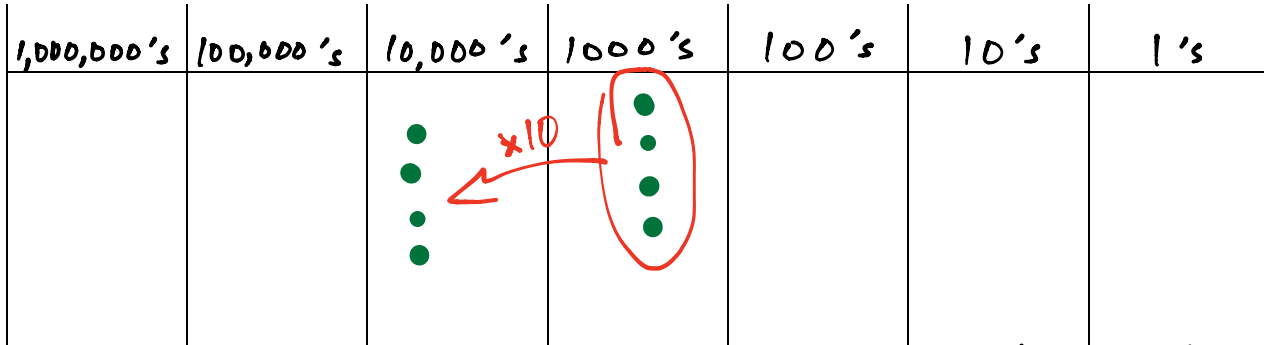
← as Tomas.

Name \_\_\_\_\_

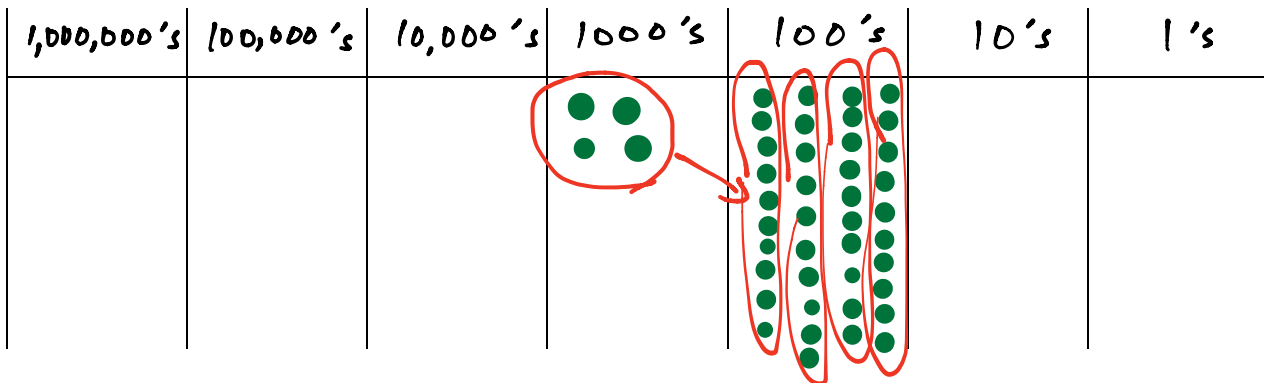
Date \_\_\_\_\_

1. As you did during the lesson, label and represent the product or quotient drawing disks on the place value chart.

a.  $10 \times 4$  thousands = 40 thousands = 4 ten thousands = 40,000



b.  $4$  thousands  $\div 10 =$  40 hundreds  $\div 10 =$  4 hundreds = 400



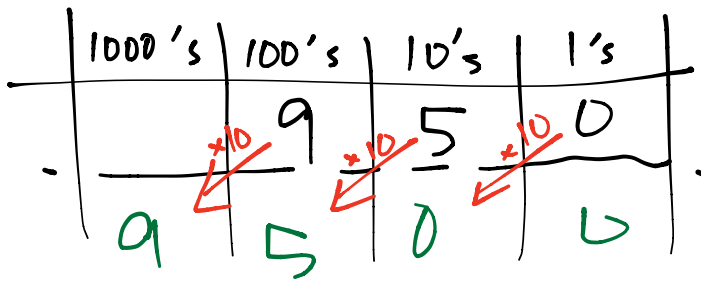
2. Fill in the blanks to complete each number sentence. Respond first in unit form, then in standard form.

Expression	Unit Form	Standard Form
$10 \times 3$ tens	30 tens	300
5 hundreds $\times 10$	50 hundreds	5,000
9 ten thousands $\div 10$	90 thousands $\div 10$	9,000
$10 \times 7$ thousands	70 thousands	70,000

3. Fill in the blanks to complete each number sentence. Respond first in unit form, then in standard form.

Expression	Unit Form	Standard Form
$(2 \text{ tens } 1 \text{ one}) \times 10$	20 tens 10 ones	210
$(5 \text{ hundreds } 5 \text{ tens}) \times 10$	50 hundreds 50 tens	5,500
$(2 \text{ thousands } 7 \text{ tens}) \div 10$	2 hundreds 7 ones	207
$(4 \text{ ten thousands } 8 \text{ hundreds}) \div 10$	4 thousands 8 tens	4,080

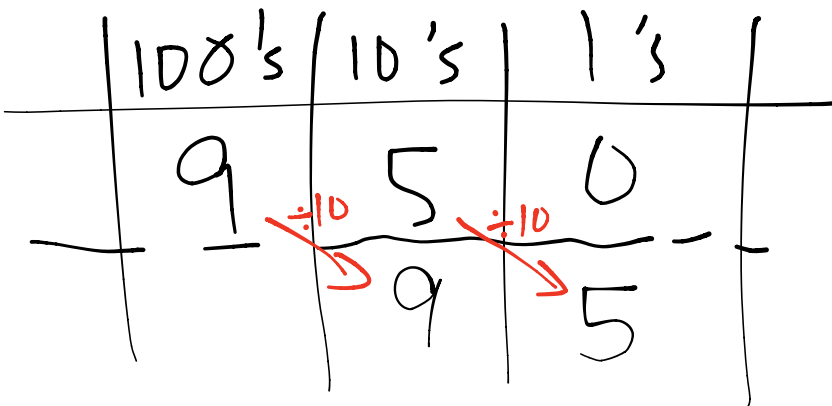
4. Emily collected \$950 selling Girl Scout cookies all day Saturday. Emily's troop collected 10 times as much as she did. How much money did Emily's troop raise?



$$950 \times 10 = 9500$$

\$9500

5. On Saturday, Emily made 10 times as much as on Monday. How much money did Emily collect on Monday?



$$950 \div 10 = 95$$

\$95

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Rewrite the following numbers including commas where appropriate:

a. 4321 4,321

b. 54321 54,321

c. 224466 224,466

d. 2224466 2,224,466

e. 10010011001 10,010,011,001

2. Complete the following chart:

Expression	Unit Form (Use the largest units possible.)	Standard Form
4 tens + 6 tens	10 tens = 1 hundred	100
8 hundreds + 2 hundreds	10 hundreds = 1 thousand	1,000
5 thousands + 7 thousands	12 thousands = 1 ten thousand 2 thousands	12,000

3. Represent each addend with number disks in the place value chart. Show the composition of larger units from 10 smaller units. Write the sum in standard form.

a. 2 thousands + 12 hundreds = 3,200

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
			● ● ●	● ● ● ● ● ● ● ● ● ●		

b. 14 ten thousands + 12 thousands = 152,000

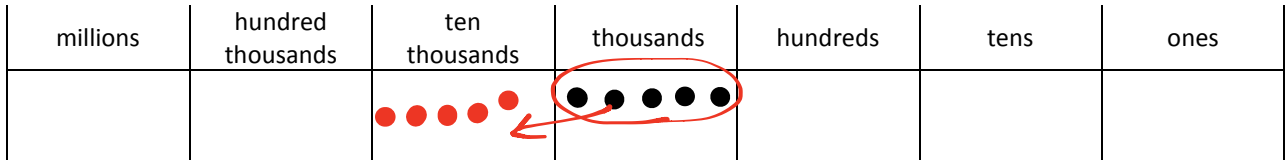
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
	●	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●			



4. Use the place value chart to represent the following equations with numbers or disks. Write the product in standard form.

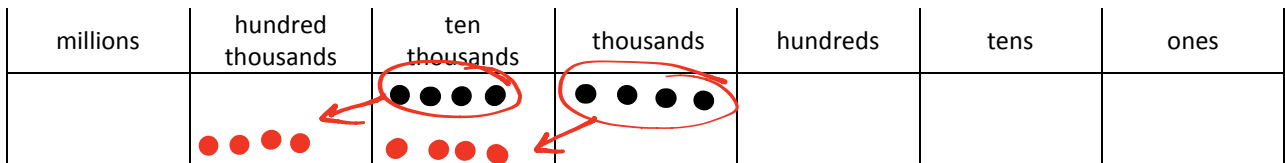
a.  $10 \times 5 \text{ thousands} =$  50,000

How many thousands are in the answer? 50



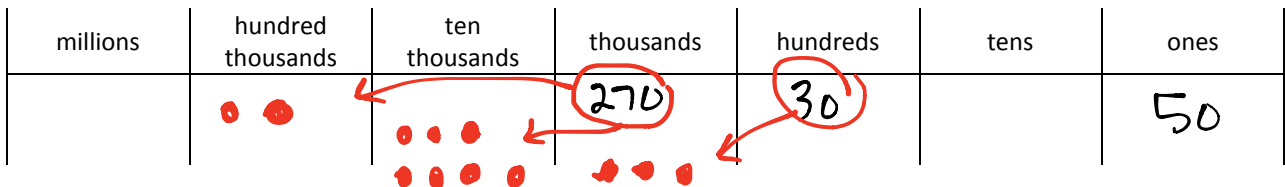
b.  $(4 \text{ ten thousands } 4 \text{ thousands}) \times 10 =$  40 ten thousands 40 thousands

How many thousands are in the answer? 440

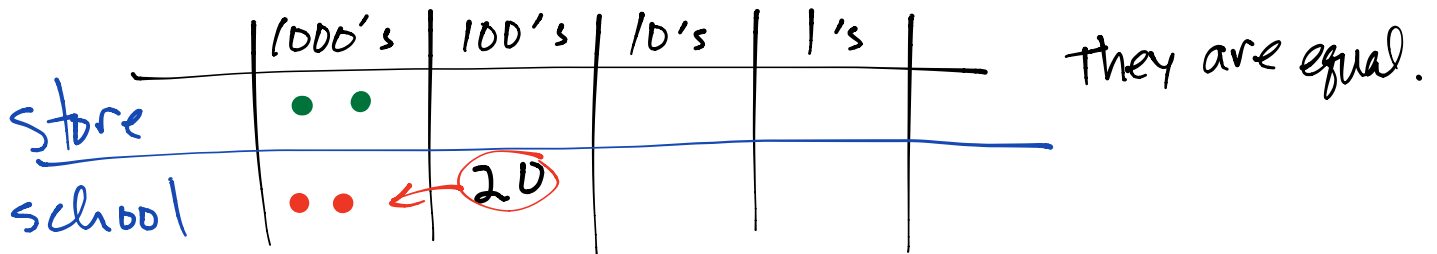


c.  $(27 \text{ thousands } 3 \text{ hundreds } 5 \text{ ones}) \times 10 =$  270 thousands 30 hundreds 50 ones

How many thousands are in your answer? 273



5. A large grocery store received an order of 2 thousand apples. A neighboring school received an order of 20 boxes of apples with 100 apples in each. Use disks or numbers on a place value chart to compare the number of apples received by the school and the number of apples received by the grocery store.



Name \_\_\_\_\_

Date \_\_\_\_\_

1. On the place value chart below, label the units and represent the number 50,679.

1,000,000's	100,000's	10,000's	1,000's	100's	10's	1's
		5	0	6	7	9

- a. Write the number in word form.

fifty, thousand six hundred seventy nine

- b. Write the number in expanded form.

$$50,000 + 600 + 70 + 9$$

2. On the place value chart below, label the units and represent the number 506,709.

1,000,000's	100,000's	10,000's	1,000's	100's	10's	1's
	5	0	6	7	0	9

- a. Write the number in word form.

five hundred six thousand seven hundred nine

- b. Write the number in expanded form.

$$500,000 + 6,000 + 700 + 9$$

3. Complete the following chart:

Number	Word Form	Expanded Form
5,370	five thousand, three hundred seventy	$5,000 + 300 + 70$
50,372	fifty thousand three hundred seventy, two	$50,000 + 300 + 70 + 2$
39,701	thirty-nine thousand, seven hundred one	$30,000 + 9,000 + 700 + 1$
309,017	three hundred nine thousand seventeen	$300,000 + 9,000 + 10 + 7$
1,070,070	one million seventy thousand seventy	$1,000,000 + 70,000 + 70$

4. Use pictures, numbers, and words to explain another way to say "sixty-five hundred."


65 hundred

six thousand five hundred


Name \_\_\_\_\_

Date \_\_\_\_\_

1. Label the units in the place value chart. Draw place value disks to represent each number in the place value chart. Use  $<$ ,  $>$ , or  $=$  to compare the two numbers. Write the correct symbol in the circle.

a. 909,013  90,013

1,000,000's	100,000's	10,000's	1,000's	100's	10's	1's
	9	0	9	0	1	3
		9	0	0	1	3


b. 210,005  220,005

1,000,000's	100,000's	10,000's	1,000's	100's	10's	1's
	2	1	0	0	0	5
	2	2	0	0	0	5

2. Compare the two numbers by using the symbols  $<$ ,  $>$ , and  $=$ . Write the correct symbol in the circle.

a. 501,107  89,171

b.  $300,000 + 50,000 + 1,000 + 800$   six hundred five thousand, nine hundred eight

c. 3 hundred thousands 3 thousands 8 hundreds 4 tens  303,840

d. 5 hundreds 6 ten thousands 2 ones  3 ten thousands 5 hundreds 1 one

3. Use the information in the chart below to list the height in feet of each skyscraper from least to greatest. Then name the tallest skyscraper.

Name of Skyscraper	Height of Skyscraper (ft.)
Willis Tower	1,450
Freedom Tower	1,776
Taipei 101	1,670
Petronas Towers	1,483

1,450    1,483    1,670    1,776

4. Arrange these numbers from least to greatest:    7,550    5,070    750    5,007    7,505

750    5,007    5,070    7,505    7,550

5. Arrange these numbers from greatest to least:    426,000    406,200    640,020    46,600

640,020    426,000    406,200    46,600

6. The area of the 50 states can be measured in square miles (sq. miles).

California is 158,648 sq. miles. Nevada is 110,567 sq. miles. Arizona is 114,007 sq. miles.  
Texas is 266,874 sq. miles. Montana is 147,047 sq. miles, and Alaska is 587,878 sq. miles.

Arrange the states listed by area from least to greatest.

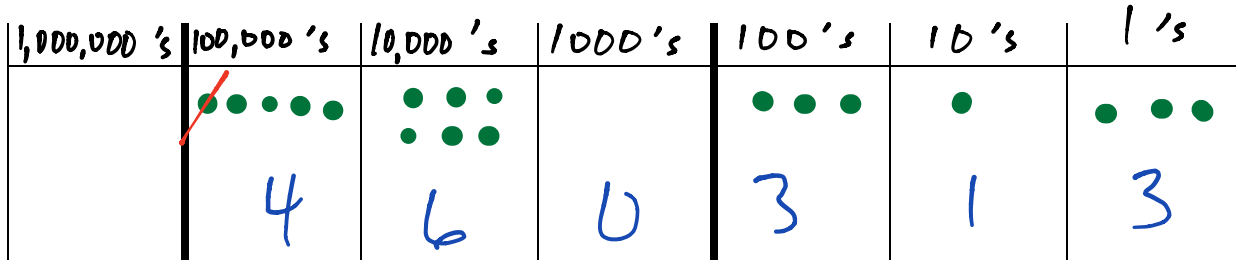
Nevada Arizona Montana California Texas Alaska

Name \_\_\_\_\_

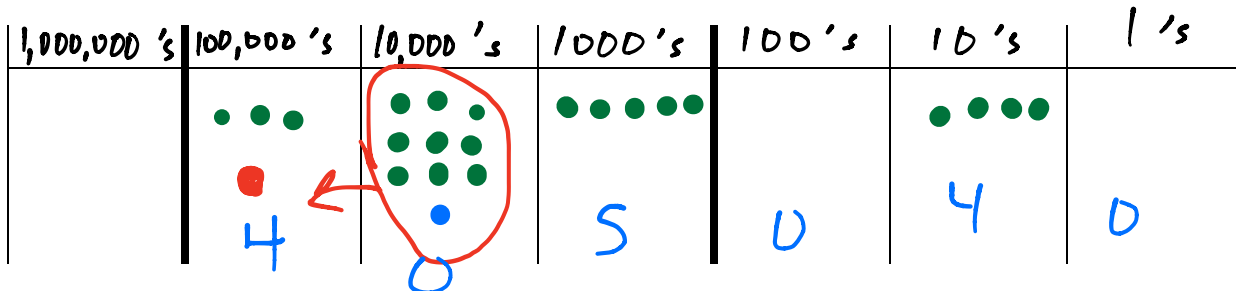
Date \_\_\_\_\_

1. Label the place value chart. Use number disks to find the sum or difference. Write the answer in standard form on the line.

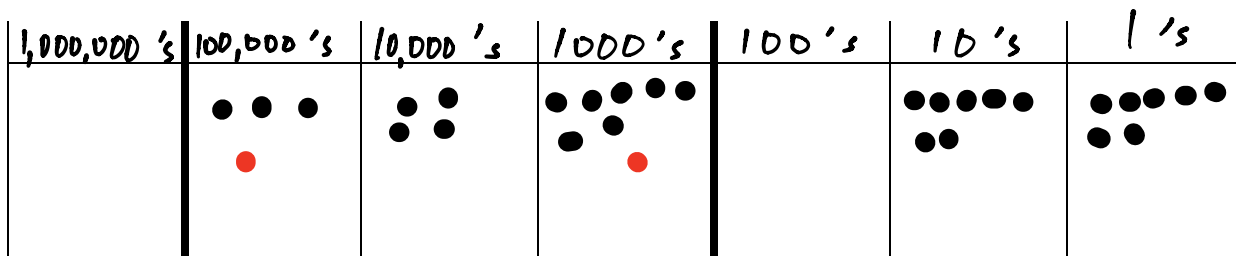
a. 100,000 less than five hundred sixty thousand, three hundred thirteen is 460,313.



b. Ten thousand more than  $300,000 + 90,000 + 5,000 + 40$  is 405,040.



c. 448,077 is 101,000 more than 347,077.



2. Complete the following equations:

a.  $100,000 + 76,960 = \underline{176,960}$

b.  $13,097 - 1,000 = \underline{12,097}$

c.  $849,000 - 10,000 = \underline{839,000}$

d.  $442,210 + 10,000 = \underline{452,210}$

e.  $172,090 = 171,090 + \underline{1,000}$

f.  $854,121 = 954,121 - \underline{100,000}$

3. Fill in the empty boxes to complete the patterns.

145,555	146,555	147,555	148,555	149,555	150,555
---------	---------	---------	---------	---------	---------

- a. Explain in pictures, numbers, and words how you found your answer.

Adding by 1000 each time.

754,321	764,321	774,321	784,321	794,321	804,321
---------	---------	---------	---------	---------	---------

- b. Explain in pictures, numbers, and words how you found your answer.

Adding by 10,000 each time.

125,876	225,876	325,876	425,876	525,876	625,876
---------	---------	---------	---------	---------	---------

- c. Explain in pictures, numbers, and words how you found your answer.

Adding by 100,000 each time.

264,445	254,445	244,445	234,445	224,445	214,445
---------	---------	---------	---------	---------	---------

- d. Explain in pictures, numbers, and words how you found your answer.

Subtract by 10,000 each time.

4. In 2012, Charlie earned an annual salary of \$54,098. At the beginning of 2013, Charlie's annual salary was raised by \$10,000. How much money will Charlie earn in 2013? Use pictures, words, or numbers to explain your thinking.

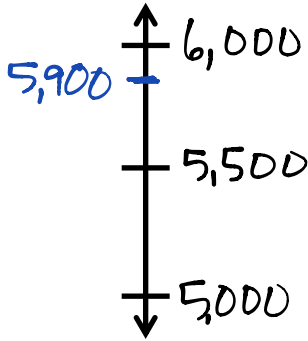
$$54,098 + 10,000 = 64,098 \quad \$ 64,098$$

Name \_\_\_\_\_

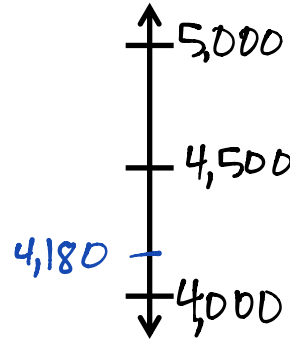
Date \_\_\_\_\_

1. Round to the nearest thousand. Use the number line to model your thinking.

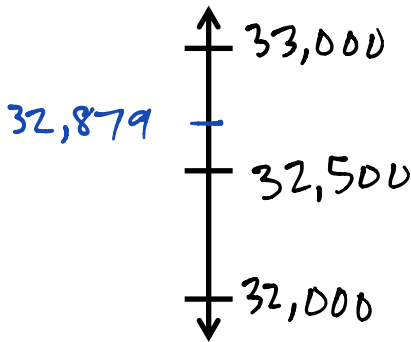
a.  $5,900 \approx \underline{6,000}$



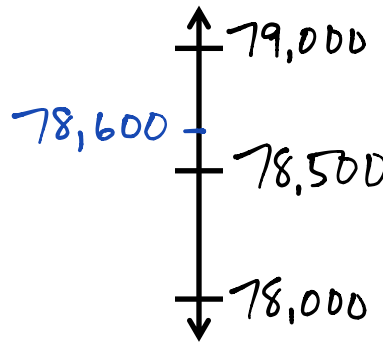
b.  $4,180 \approx \underline{4,000}$



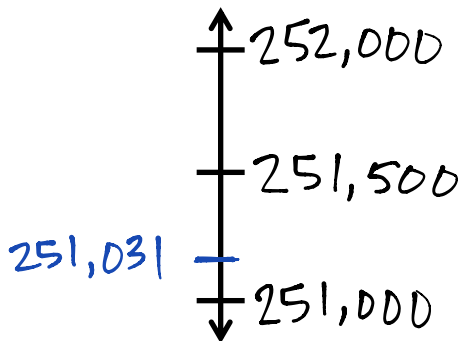
c.  $32,879 \approx \underline{33,000}$



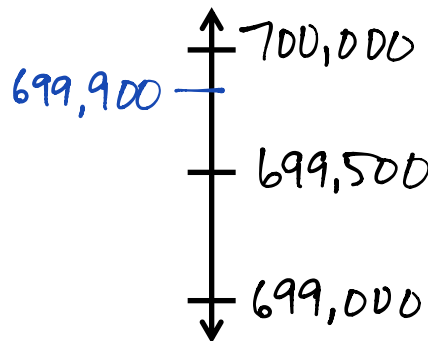
d.  $78,600 \approx \underline{79,000}$



e.  $251,031 \approx \underline{251,000}$



f.  $699,900 \approx \underline{700,000}$





2. Steven and his friend were putting together a 5,000 piece puzzle. In one day, they put together 981 of the pieces. About how many pieces did they put together? Round to the nearest thousand. Use what you know about place value to explain your answer.

$$981 \approx 1,000$$

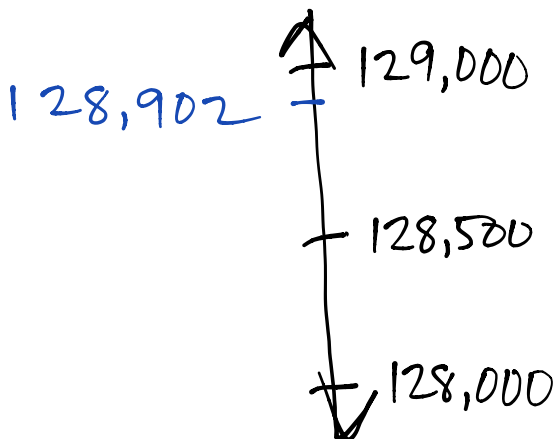
3. Louise's family went on vacation to Disney World. Their vacation cost \$5,990. Sophia's family went on vacation to Niagara Falls. Their vacation cost \$4,720. Both families budgeted about \$5,000 for their vacation. Whose family stayed closer to the budget? Round to the nearest thousand. Use what you know about place value to explain your answer.

$$\text{Louise: } 5,990 \approx 6,000$$

$$\text{Sophia: } 4,720 \approx 5,000$$

Sophia's family stayed closer to their budget.

4. Marsha's brother wanted help with the first question on his homework. The question asked the students to round 128,902 to the nearest thousand and then to explain the answer. Marsha's brother thought that the answer was 128,000. Was his answer correct? How do you know? Use pictures, numbers, and words to explain what you know about place value.



$$128,902 \approx 129,000$$

Marsha's brother is incorrect.

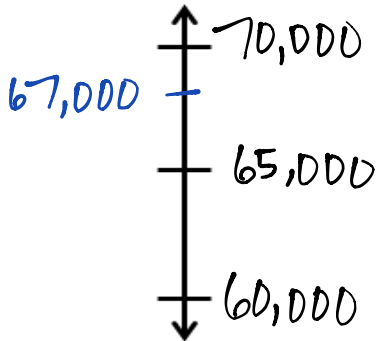
Name \_\_\_\_\_

Date \_\_\_\_\_

Directions: Complete each statement by rounding the number to the given place value. Use the number line to show your work.

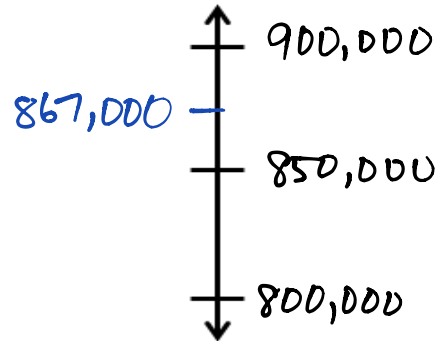
1a. 67,000 rounded to the nearest ten thousand

is 70,000.



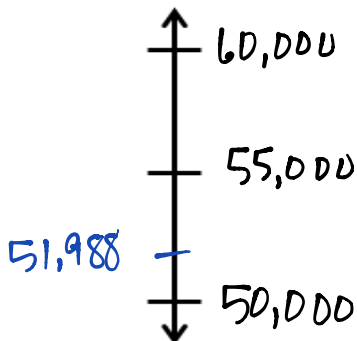
2a. 867,000 rounded to the nearest hundred thousand

is 900,000.



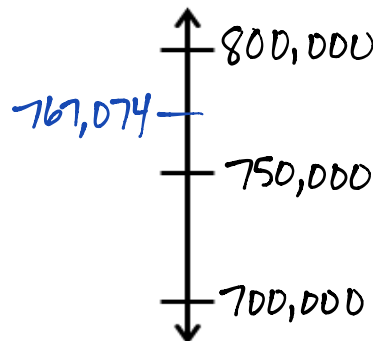
1b. 51,988 rounded to the nearest ten thousand

is 50,000.



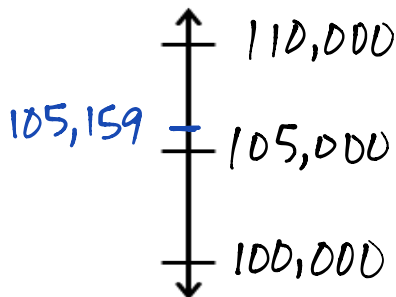
2b. 767,074 rounded to the nearest hundred thousand

is 800,000.



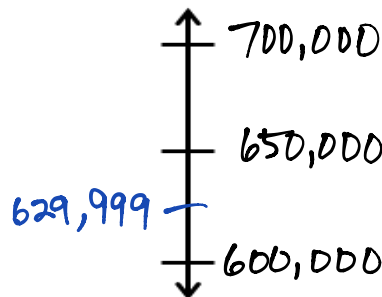
1c. 105,159 rounded to the nearest ten thousand

is 110,000.

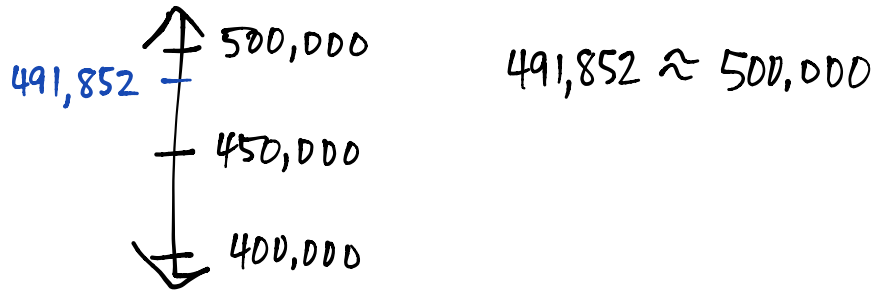


2c. 629,999 rounded to the nearest hundred thousand

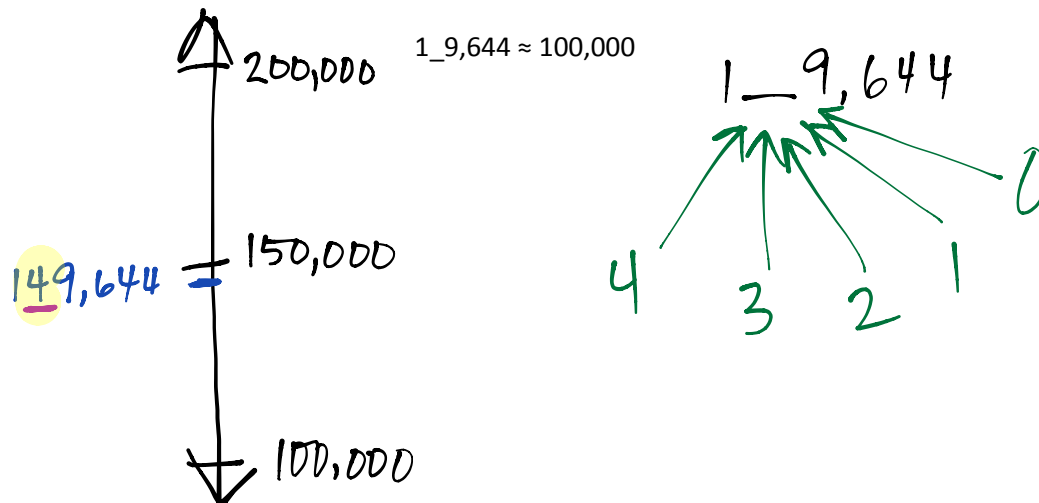
is 600,000.



3. 491,852 people went to the water park in the month of July. Round this number to the nearest hundred thousand to estimate how many people went to the park. Use a number line to show your work.



4. A digit is missing in the number below, which was then rounded to the nearest hundred thousand. List the possible digits that could go in the ten thousands place to make this statement correct. Use a number line to show your work.



5. Estimate the sum by rounding each number to the given place value.

$$164,215 + 216,088$$

- a. Round to the nearest ten thousands.

$$160,000 + 220,000 = 380,000$$

- b. Round to the nearest hundred thousands.

$$200,000 + 200,000 = 400,000$$

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Round to the nearest thousand.

a.  $6,842 \approx \underline{7,000}$

b.  $2,722 \approx \underline{3,000}$

c.  $16,051 \approx \underline{16,000}$

d.  $706,421 \approx \underline{706,000}$

e. Explain how you found your answer for Part (d).

2. Round to the nearest ten thousand.

a.  $88,999 \approx \underline{90,000}$

b.  $85,001 \approx \underline{90,000}$

c.  $789,091 \approx \underline{790,000}$

d.  $905,154 \approx \underline{910,000}$

e. Explain why two problems have the same answer. Write another number that has the same answer when rounded to the nearest ten thousand.

$87,347$  or anything in range of  $85,001$  to  $94,999$

3. Round to the nearest hundred thousand.

a.  $89,659 \approx \underline{100,000}$

b.  $751,447 \approx \underline{800,000}$

c.  $617,889 \approx \underline{600,000}$

d.  $817,245 \approx \underline{800,000}$

e. Explain why two problems have the same answer. Write another number that has the same answer when rounded to the nearest hundred thousand.

$799,999$  or anything in range of  $750,000$  to  $849,999$

4. Solve the following problems using pictures, numbers, and words.

- a. At President Obama’s inauguration in 2013, the newspaper headlines stated there were about 800,000 people in attendance. If the newspaper rounded to the nearest hundred thousand, what is the largest number and smallest number of people that could have been there?

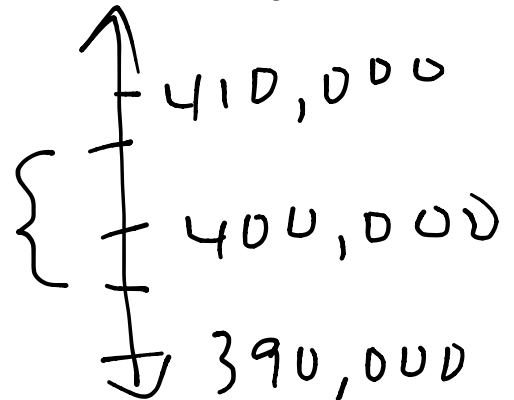
Largest = 849,999

Smallest = 750,000

- b. At President Bush’s inauguration in 2005, the newspaper headlines stated there were about 400,000 people in attendance. If the newspaper rounded to the nearest ten thousand, what is the largest number and smallest number of people that could have been there?

Smallest = 395,000

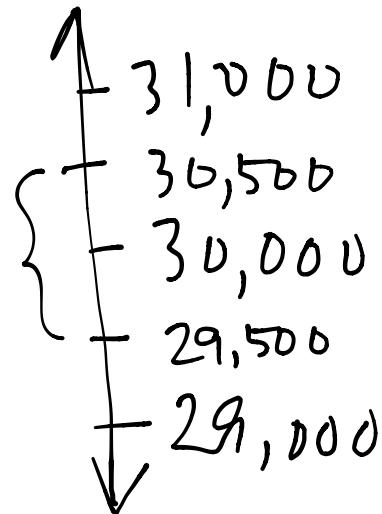
Largest = 404,999



- c. At President Lincoln’s inauguration in 1861, the newspaper headlines stated there were about 30,000 people in attendance. If the newspaper rounded to the nearest thousand, what is the largest number and smallest number of people that could have been there?

Largest = 30,499

Smallest = 29,500



Name \_\_\_\_\_

Date \_\_\_\_\_

1. Round 845,001 to the nearest

a. thousand: 845,000b. ten thousand: 850,000d. hundred thousand: 800,000

2. Complete each statement by rounding the number to the given place value.

a. 783 rounded to the nearest hundred is 800.b. 12,781 rounded to the nearest hundred is 12,800.c. 951,194 rounded to the nearest hundred is 951,200.d. 1,258 rounded to the nearest thousand is 1,000.e. 65,124 rounded to the nearest thousand is 65,000.f. 99,451 rounded to the nearest thousand is 99,000.g. 60,488 rounded to the nearest ten thousand is 60,000.h. 80,801 rounded to the nearest ten thousand is 80,000.i. 897,100 rounded to the nearest ten thousand is 900,000.j. 880,005 rounded to the nearest hundred thousand is 900,000.k. 545,999 rounded to the nearest hundred thousand is 500,000.l. 689,114 rounded to the nearest hundred thousand is 700,000.

3. Solve the following problems using pictures, numbers, and words.

- a. In the 2011 New York City Marathon, 29,867 men finished the race and 16,928 women finished the race. Each finisher was given a t-shirt. About how many men's shirts were given away? About how many women's shirts were given away? Explain how you found your answers.

$$29,867 \approx 30,000$$

$$16,928 \approx 17,000$$

Rounded both to nearest thousand.

- b. In the 2010 New York City Marathon, 42,429 people finished the race and received a medal. Before the race, the medals had to be ordered. If you were the person in charge of ordering the medals and estimated how many to order by rounding, would you have ordered enough medals? Explain your thinking.

I might have rounded 42,429 to 43,000. This would not have been enough.

- c. In 2010, 28,357 of the finishers were men and 14,072 of the finishers were women. About how many more men finished the race than women? To determine your answer, did you round to the nearest ten thousand or thousand? Explain.

$$\text{Men: } 28,357 \approx 28,000$$

About 14,000 more men than women.

$$\text{Women: } 14,072 \approx 14,000$$