

Name _____

Comparing Values

Compare the values of the underlined digits.

1. 3,492 and 704

The value of 4 in 3,492

is 100 times

the value of 4 in 704.

2. 8,596 and 985

The value of 8 in 8,596

is 100 times

the value of 8 in 985.

3. 2,481 and 5,072

The value of 2 in 2,481

is 1,000 times

the value of 2 in 5,072.

4. 43,158 and 71,435

The value of 3 in 43,158

is 100 times

the value of 3 in 71,435.

5. 495,123 and 63,129

The value of 9 in 495,123

is 10,000 times

the value of 9 in 63,129.

6. 506,712 and 324,859

The value of 5 in 506,712

is 10,000 times

the value of 5 in 324,859.

7. 837,164 and 4,508

The value of 8 in 837,164

is 100,000 times

the value of 8 in 4,508.

8. 631,485 and 682

The value of 6 in 631,485

is 1,000 times

the value of 6 in 682.

9. **Stretch Your Thinking** Write a pair of numbers such that the value of the 7 in the first number is 1,000 times the value of the 7 in the second number, and the value of the 3 in the first number is 100 times the value of the 3 in the second number.

Possible answer: 637,145 and 215,347

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Period Posers

Solve each riddle. **Possible answers are given.**

1. Fred: My number has two periods. One period contains the digits 3, 0, and 6 in that order. The other contains the digits 0, 9, and 5 in that order.

Ned: My number has two periods also. One contains the digits 4, 8, and 6 in that order. The other period contains the digits 1, 2, and 7 in that order.

Fred: Yes, but my number is greater than your number.

What are Fred's and Ned's numbers?

Fred: 306,095

Ned: 127,486

2. Ann: My number has two periods. One contains the digits 4, 1, and 8 in that order. The other contains the digit 9.

Jan: My number has two periods. One period contains only 0s. The other has the digits 1 and 0 in that order.

Ann: Too bad, my number must be greater than your number.

Jan: Nope—my number is greater!

What are Ann's and Jan's numbers?

Ann: 9,418

Jan: 10,000

3. Mo: My number has two periods. One period has a 7 in the hundreds place. The other has an 8 in the tens place.

Bo: My number also has two periods. One has a 1 in the hundreds place. The other has a 2 in the tens place.

Mo: All other digits in our numbers are zeros. So how can it be that your number is greater than my number?

What are Mo's and Bo's numbers?

Mo: 80,700; Bo: 100,020

4. Stretch Your Thinking Write your own period poser. Then exchange it with a classmate and solve each other's posers.

Check students' work.

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Place-Value Puzzle

Fill in each blank with a digit that will make the number sentence true. The digits to choose from are listed in the box under each number sentence. Use each digit only once.

1. $1 \underline{3} 5,120 > 125, \underline{2} 20 > 125,1 \underline{1} 0$

1, 2, 3

2. $4 \underline{1} 3,900 < 42 \underline{3}, 900 = 423, \underline{9} 00 < 42 \underline{4}, 900$

1, 3, 4, 9

3. $27 \underline{9}, 010 < 2 \underline{8} 8,010 < 29 \underline{7}, 010$ Possible answers are given.

7, 8, 9

4. $3 \underline{6}, 788 > 35,7 \underline{8} 8 = 35, \underline{7} 88 > 35, \underline{5} 88$

5, 6, 7, 8

5. $6 \underline{4} 8,138 > 6 \underline{3} 7,294 < 63 \underline{9}, 705$


3, 4, 9

6. $4 \underline{7} 6,047 > \underline{4} 63,941 = 463, \underline{9} 41 > \underline{3} 86, \underline{5} 42$

3, 4, 5, 7, 9

7. $101,5 \underline{8} 2 > 1 \underline{0} 1,508 > 101, \underline{3} 62 > 101,3 \underline{5} 7$

0, 3, 5, 8

8.  **Write Math** If you know A is greater than B and B is greater than C, do you have to compare A to C to know which is greater? Use an example to explain.

No; possible answer: $3,413 > 2,688$ and $2,688 > 1,999$; so, $3,413$ is greater than $1,999$.

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Rounding Ranges

Solve each riddle. Give your answer as a range of numbers.

1. When rounded to the nearest hundred, I become 500. What numbers could I be?

450 to 549

2. When rounded to the nearest ten, I become 500. What numbers could I be?

495 to 504

3. When rounded to the nearest thousand, I become 3,000. What numbers could I be?

2,500 to 3,499

4. When rounded to the nearest hundred, I become 3,000. What numbers could I be?


2,950 to 3,049

5. When rounded to the nearest hundred thousand, I become 600,000. What numbers could I be?

550,000 to 649,999

6. When rounded to the nearest ten thousand, I become 600,000. What numbers could I be?

595,000 to 604,999

7.  Compare the ranges of your answers to Exercises 2, 4, and 6 to the ranges in Exercises 1, 3, and 5. What do you notice? Give a reason for your observation.

Possible answer: the ranges in 2, 4, and 6 are all narrower than the ranges in 1, 3, and 5. This is because in 2, 4, and 6, the place rounded to is less than the place rounded to in 1, 3, and 5.

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Number Comparisons

Compare the numbers. Write $<$, $>$, or $=$.

1. 400 tens $<$ 48 hundreds

2. 7 thousands, 8 hundreds $<$ 2,500 tens

3. 715 thousands, 34 tens $>$ 715,034

4. 10 thousands, 5 hundreds $=$ 1,050 tens

5. 34 ten thousands, 85 hundreds $=$ 348,500


6. 6 hundred thousands, 47 tens $>$ 60 ten thousands, 4 hundreds

7. 2 ten thousands, 45 hundreds $<$ 308 hundreds

8. 25 thousands, 56 ones $<$ 3 ten thousands, 17 hundreds

9. 476 thousands $>$ 4 hundred thousands, 76 hundreds

10. 35 ten thousands, 8 hundreds $=$ 3 hundred thousands
50 thousands, 80 tens

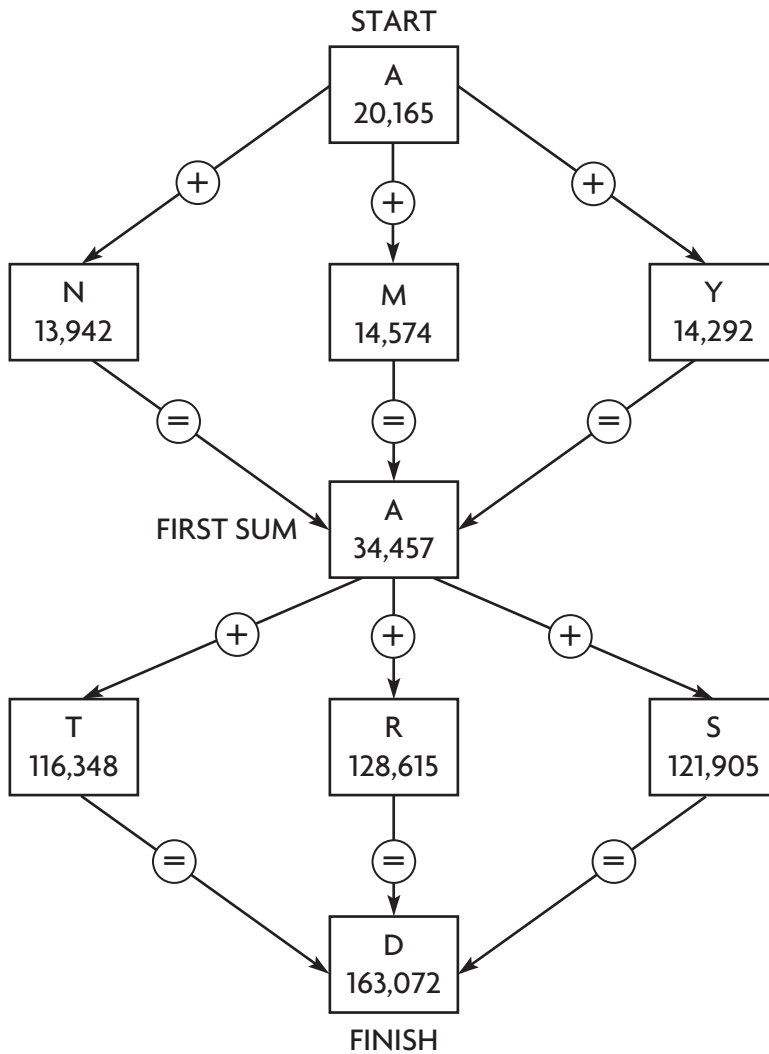
11.  **Write Math** Look back at Exercise 5. **Explain** how you found the answer.

Possible answer: I renamed 34 ten thousands, 85 hundreds as 3 hundred thousands 4 ten thousands 8 thousands, 5 hundreds and wrote that number in standard form: 348,500. It is the same as the number on the right.

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3-Foot Path

Find the path with the addends that correctly leads from the **START** box to the **FIRST SUM** box, and from there to the sum in the **FINISH** box. Then write the letters of the 5 boxes on your path in order to answer the riddle.



Where can you buy a ruler that is 3 feet long?

AT A Y A R D **SALE**

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Unknown Digits

Complete each subtraction problem by finding the unknown digits.

1.

$$\begin{array}{r} 42, \boxed{5}53 \\ - 2\boxed{7}, 34\boxed{7} \\ \hline 15, 2\boxed{0}6 \end{array}$$

2.

$$\begin{array}{r} 90, 7\boxed{3}\boxed{1} \\ - \boxed{4}3, \boxed{7}95 \\ \hline 4\boxed{6}, 936 \end{array}$$

3.

$$\begin{array}{r} \boxed{2}41, \boxed{6}1\boxed{8} \\ - 128, 7\boxed{2}1 \\ \hline 1\boxed{1}\boxed{2}, 897 \end{array}$$

4.

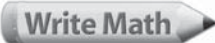
$$\begin{array}{r} 63\boxed{0}, \boxed{4}\boxed{4}2 \\ - \boxed{1}\boxed{7}5, 63\boxed{4} \\ \hline 454, 808 \end{array}$$

5.

$$\begin{array}{r} \boxed{1}0\boxed{6}, 3\boxed{2}7 \\ - \quad 8, 75\boxed{9} \\ \hline \boxed{9}7, \boxed{5}68 \end{array}$$

6.

$$\begin{array}{r} \boxed{7}00, \boxed{0}\boxed{0}\boxed{0} \\ - 238, 172 \\ \hline 4\boxed{6}\boxed{1}, 828 \end{array}$$

7.  **Write Math** Describe what strategy you used to complete the unknown-digit subtraction problems. Use an example to explain.

Possible answer: Use the inverse relationship between subtraction and addition. In Exercise 1, in the ones place, $6 + \blacksquare = 3$; $6 + 7 = 13$, so $\blacksquare = 7$. In the tens place, $5 - 4 = 1$; subtract the regrouped ten: $1 - 1 = 0$. So, the unknown tens digit is 0. In the hundreds place, $\blacksquare - 3 = 2$; $2 + 3 = 5$, so $\blacksquare = 5$. In the thousands place, $5 + \blacksquare = 2$; $5 + 7 = 12$, so $\blacksquare = 7$. In the ten thousands place, $4 - 2 = 2$. Subtract the regrouped ten thousand: $2 - 1 = 1$. Add to check the answer: $15,206 + 27,347 = 42,553$.

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Take a Seat!

Use the table for 1–5.

1. Last night's game at the arena in Cleveland was 251 seats short of being filled to capacity. How many people attended the game?

$$\underline{20,562 - 251 = 20,311}$$

Basketball Arena Seating Capacities	
City	Capacity
Cleveland	20,562
Boston	18,624
Atlanta	20,300
New Orleans	18,500
Los Angeles	18,997

2. How many more people can be seated in the largest arena than can be seated in the smallest arena?


$$\underline{20,562 - 18,500 = 2,062}$$

3. Estimate the difference in the seating capacities of the Atlanta and Los Angeles arenas. **Explain** how you made your estimate.

$$\underline{\text{Possible answer: } 1,300; \text{ I rounded } 18,997 \text{ to } 19,000; 20,300 - 19,000 = 1,300.}$$

4. There are two sold-out basketball games tonight. One is at the arena in Boston, and the other is at the arena in New Orleans. How many people are attending the two games?

$$\underline{18,624 + 18,500 = 37,124}$$

5.  The biggest college basketball arena seats 33,000. Is the combined capacity of the Cleveland and Boston arenas greater than or less than the capacity of the biggest college arena? How much greater or less? **Explain.**

greater than; 6,186; Possible answer:

I subtracted 33,000 from the sum of the Cleveland and Boston capacities; $20,562 + 18,624 = 39,186$; $39,186 - 33,000 = 6,186$.