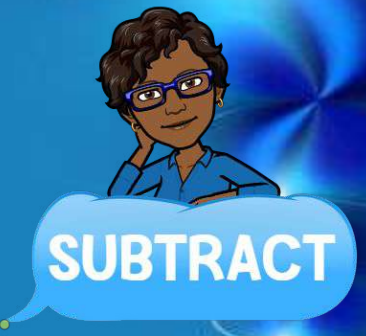
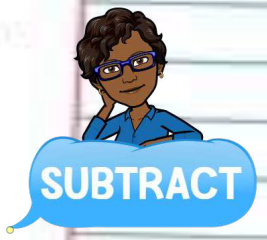
Lesson 2-6



Subtract Greater Numbers

BROADUS LEARNINGS



STANDARD:

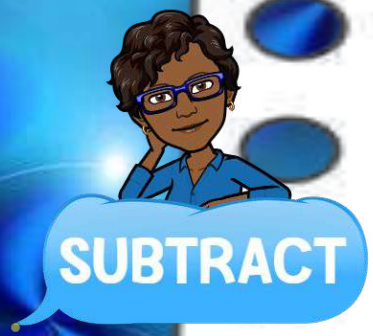
NC.4.NBT.4

Add and subtract multi-digit whole numbers up to and including 100,000 using the standard algorithm with place value understanding.

OBJECTIVE:

Today, we will use place value and an algorithm to subtract whole numbers.

BROADUS LEARNINGS

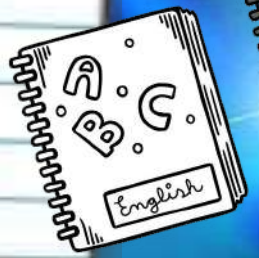


I CAN STATEMENT:

I can use the standard algorithm and place-value to subtract whole numbers.

ESSENTIAL QUESTION:

How do you subtract greater numbers efficiently?



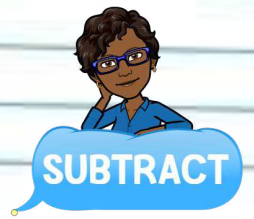
BROADUS LEARNINGS

Take notes in your blue notebook when you see the notebook icon.

STANDARD ALGORITHM STEPS: SUBTRACTION

- ➔ Line up the digits by places and label them.
- ➔ Subtract the ones place.
- ➔ Subtract the tens place.
- ➔ Subtract the hundreds place.
- ➔ Subtract the thousands place.
- ➔ Keep going until you have subtracted all places in the problem.

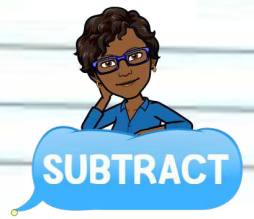
Regroup if there is a place in which the digit in the minuend, or top number, is less than the digit in the subtrahend, or bottom number.



Take notes in your blue notebook when you see the notebook icon.

We have learned a new term called inverse operations. Inverse operations are opposite operations. The inverse of addition is subtraction.

We can use inverse operations to check our work! In the problems that follow, we will subtract and then use the inverse operation (add) to make sure our answer is accurate.



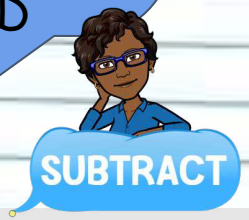
BROADUS LEARNINGS

Subtract, then use the inverse operation to check your work.
Estimate to check if the difference is reasonable. 4,387 - 3,359

Line up by place value.

The larger number (greatest value) goes on top. MINUEND

The number you are subtracting goes on the bottom. SUBTRAHEND



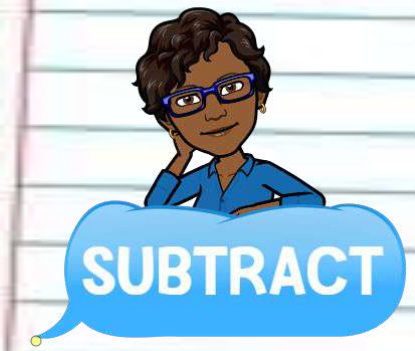
Th	H	T	O
		7	17
4,	3	8	7
− 3,	3	5	9
			8

1. Subtract the ones place. Regroup if needed.

Regroup: 8 tens + 7 ones = 7 tens + 17 ones

17 ones - 9 ones = 8 ones

Subtract, then use the inverse operation to check your work.
Estimate to check if your answers are reasonable.



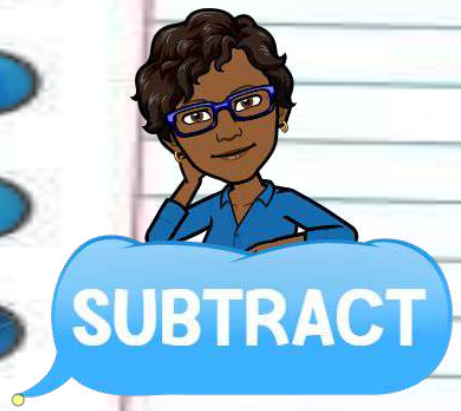
Th	H	T	O
		7	17
4,	3	8	7
− 3,	3	5	9
		2	8

2. Subtract the tens place. Regroup if needed.

7 tens - 5 tens = 2 tens

No regrouping needed because the minuend is greater than the subtrahend.

Subtract, then use the inverse operation to check your work.
Estimate to check if your answers are reasonable.



	Th	H	T	O
			7	17
	4,	3	8	7
−	3,	3	5	9
	0,	2	8	

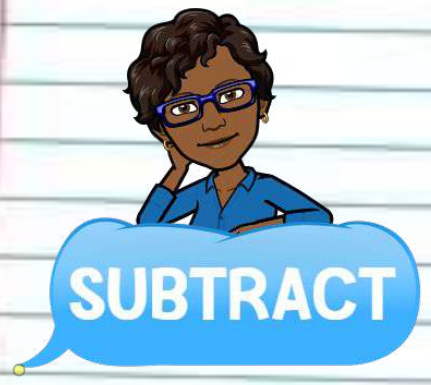
1. Subtract the **hundreds** place. Regroup if needed.

3 hundreds - 3 hundreds = 0 hundreds

No regrouping needed because the minuend is greater than the subtrahend.

BROADUS LEARNINGS

Subtract, then use the inverse operation to check your work.
Estimate to check if your answers are reasonable.



	Th	H	T	O
			7	17
	4	,	3	8 7
−	3	,	3	5 9
	1	,	0	2 8

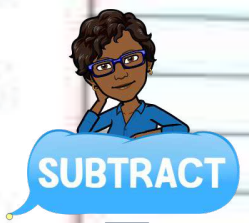
1. Subtract the thousands place. Regroup if needed.

4 thousands - 3 thousands = 0 thousands

No regrouping needed because the minuend is greater than the subtrahend.

We will use the inverse operation to check our work. We said that 4,387 - 3,359 = 1,028

If we are correct, 1,028 + 3,359 will equal 4,387.

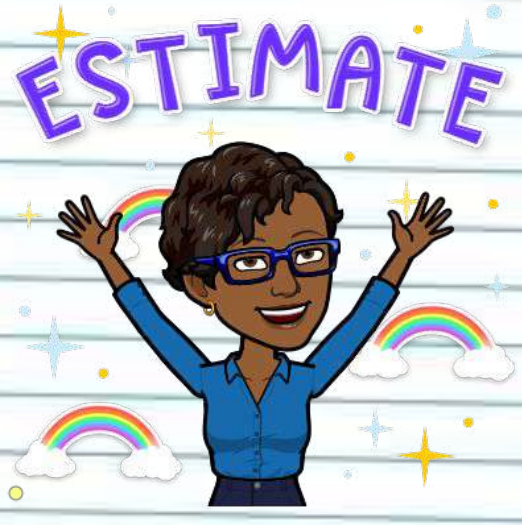


Check

$$\begin{array}{r} {\scriptstyle 1} \\ 3,359 \\ +\ 1,028 \\ \hline 4,387 \end{array}$$

You can also use an estimate to check that your answer is reasonable.

Remember your rounding rules!



Th	H	T	O		Th	H	T	O
4	,	3	8	7	→	4	,	0	0	0
− **3**	,	3	5	9	→	− 3	,	0	0	0
1	,	0	2	8	→	1	,	0	0	0

This problem is rounded to the nearest thousands. So 1,028 is reasonable.

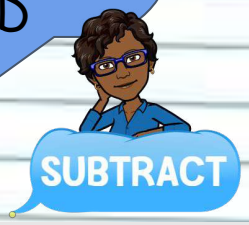
BROADUS LEARNINGS

Barleigh has 7,278 baseball cards in his scrapbook. June has 998 baseball cards in his scrapbook. How many more baseball cards does Barleigh have than June?

Line up by place value.

The larger number (greatest value) goes on top. MINUEND

The number you are subtracting goes on the bottom. SUBTRAHEND



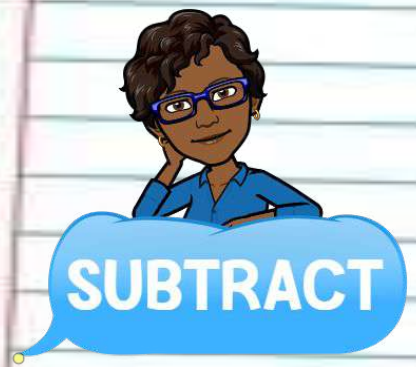
Th	H	T	O
7,	2	7	8
−	9	9	8
			0

1. Subtract the ones place. Regroup if needed.

8 ones - 8 ones = 0 ones

No regrouping needed because the minuend is greater than the subtrahend.

Barleigh has 7,278 baseball cards in his scrapbook. June has 998 baseball cards in her scrapbook. How many more baseball cards does Barleigh have than June?

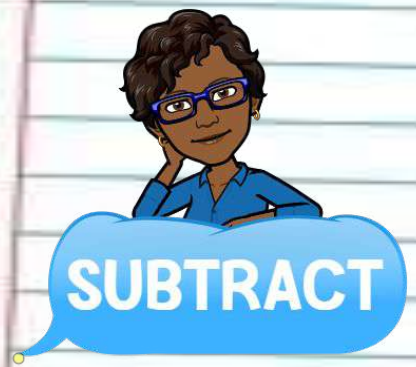


Th	H	T	O
	1	17	
7	~~2~~	~~17~~	8
−	9	9	8
	8	0	

1. Subtract the **tens** place. Regroup if needed.

Regroup: 2 hundreds + 7 tens = 1 hundred + 17 tens
17 tens - 9 tens = 8 ones

Barleigh has 7,278 baseball cards in his scrapbook. June has 998 baseball cards in her scrapbook. How many more baseball cards does Barleigh have than June?

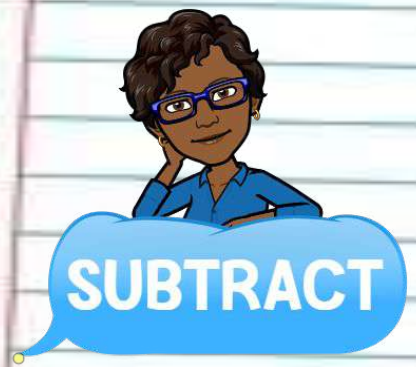


Th	H	T	O
6	11	17	
~~7~~	~~1~~	~~2~~	8
-	9	9	8
2	8	0	

1. Subtract the **hundreds** place. Regroup if needed.

Regroup: 7 thousands + 1 hundred = 6 thousands + 11 thousands
11 hundreds - 9 hundreds = 2 hundreds

Barleigh has 7,278 baseball cards in his scrapbook. June has 998 baseball cards in her scrapbook. How many more baseball cards does Barleigh have than June?



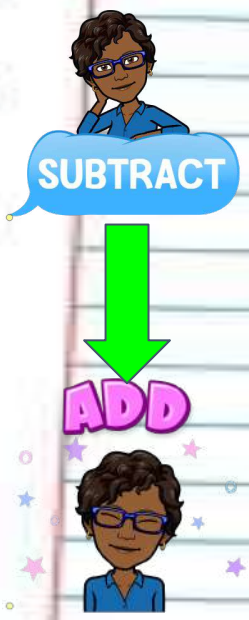
Th	H	T	O
6	11	17	
~~7~~	~~1~~	~~2~~	78
-	9	9	8
6,	2	8	0

1. Subtract the thousands place. Regroup if needed.

Regroup: 6 thousands - 0 thousands = 6 thousands
No regrouping needed because the minuend is greater than the subtrahend.

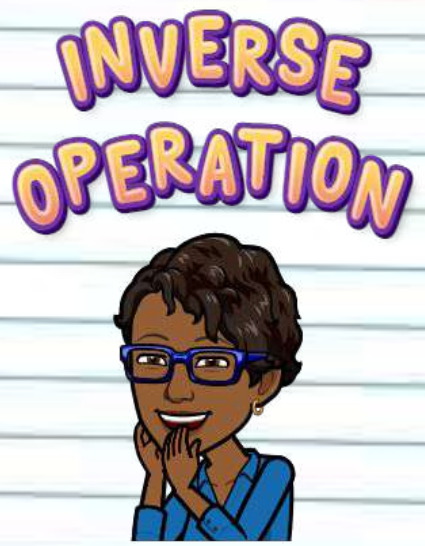
We will use the inverse operation to check our work. We said that 7,278 - 998 = 6,280

If we are correct 6,280 + 998 will equal 7,278.



Check

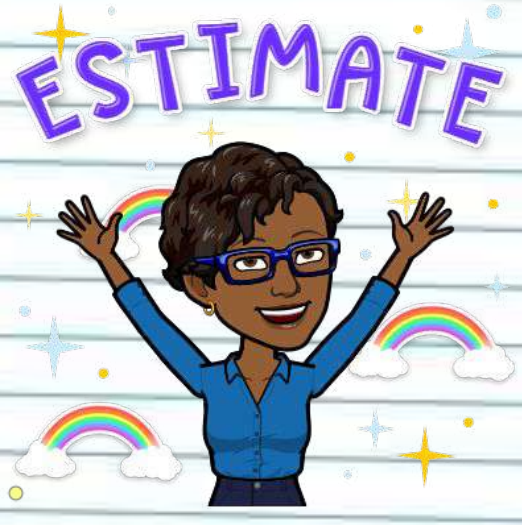
$$\begin{array}{r} {\scriptstyle 1\ \ 1\ \ } \\ 6,280 \\ +\ \ 998 \\ \hline 7,278 \end{array}$$



BROADUS LEARNINGS

You can also use an estimate to check that your answer is reasonable.

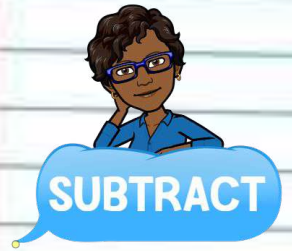
Remember your rounding rules!



Th	H	T	O		Th	H	T	O
7,	2	7	8	→	7,	3	0	0
−	9	9	8	→	− 1,	0	0	0
6,	2	8	0	→	6,	3	0	0

This problem is rounded to the nearest hundreds. So 6,280 is reasonable.

BROADUS LEARNINGS



Tth Th H T O

$$\begin{array}{r} 74{,}765 \\ -\ 26{,}591 \\ \hline 4 \end{array}$$

1. Subtract the ones place. Regroup if needed.

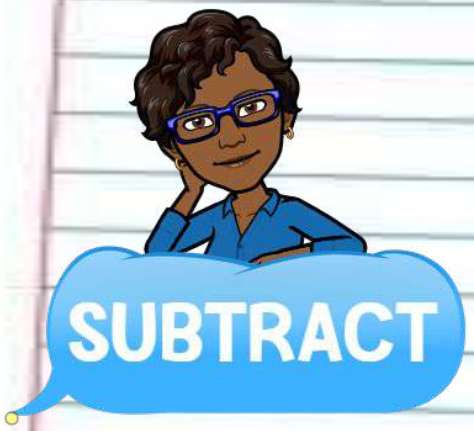
Line up by place value.

The larger number (greatest value) goes on top. MINUEND

The number you are subtracting goes on the bottom. SUBTRAHEND

5 ones - **1** one = **4** ones

No regrouping needed because the minuend is greater than the subtrahend.

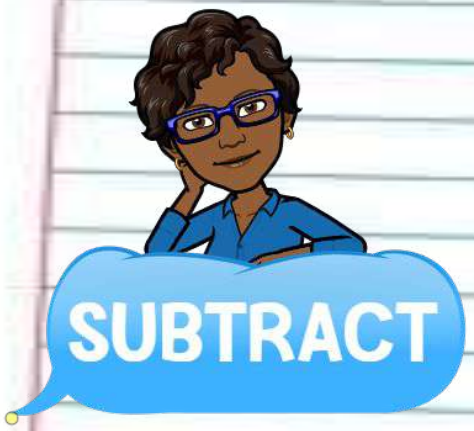


Tth	Th	H	T	O
		6	16	
	7	~~4~~	~~1~~6	5
-	2	6	5	9 1
			7	4

1. Subtract the tens place. Regroup if needed.

Regroup: 7 hundreds + 6 tens = 6 hundred + 16 tens

16 tens - 9 tens = 7 tens

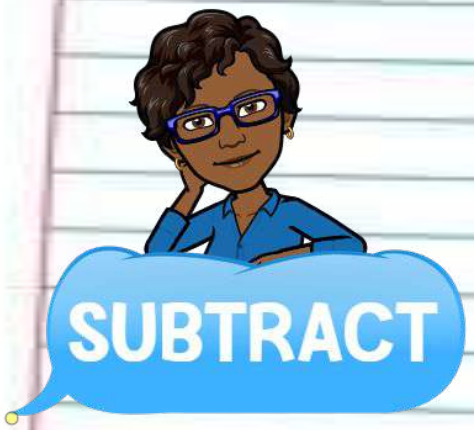


Tth	Th	H	T	O
		6	16	
	7	4,	~~1~~	65
−	2	6,	5	91
		1	7	4

1. Subtract the **hundreds** place. Regroup if needed.

6 hundreds - 5 hundreds = 1 hundred
No regrouping needed because the minuend is equal to the subtrahend.

BROADUS LEARNINGS



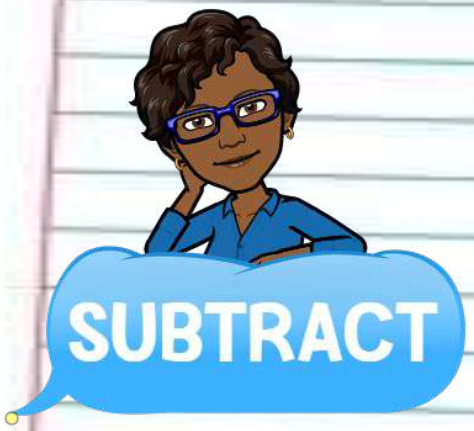
Tth	Th	H	T	O
6	14	6	16	
~~7~~	~~4~~	~~,~~	~~6~~	5
- 2	6	,	5	9 1
8	,	1	7	4

1. Subtract the **thousands** place. Regroup if needed.

Regroup: **7 ten thousands** + **4** thousands = **6** ten thousands + **14** thousands

14 thousands - **6** thousands = **8** thousands

BROADUS LEARNINGS



Tth	Th	H	T	O
6	14	6	16	
~~7~~	~~4~~	~~,~~	~~6~~	5
- 2	6	,	5	9 1
4	8	,	1	7 4

1. Subtract the **ten thousands** place. Regroup if needed.

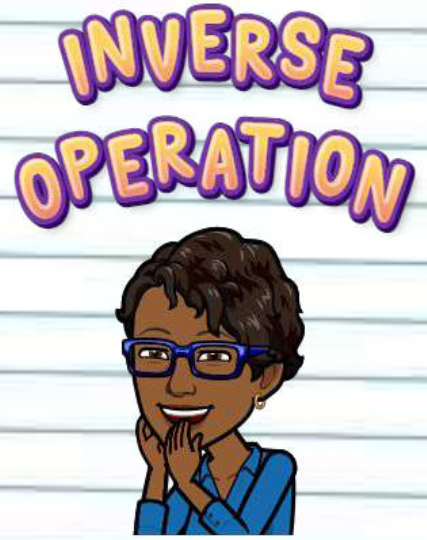
6 ten thousands - 2 ten thousands = 4 ten thousands
No regrouping needed because the minuend is greater than the subtrahend.

We will use the inverse operation to check our work. We said that 74,765 - 26, 591 = 48,174

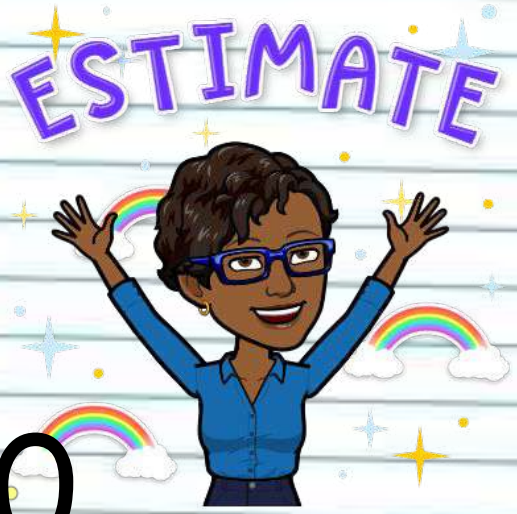
If we are correct 48,174 + 26,591 will equal 74,765.

Check

$$\begin{array}{r} {\scriptstyle 1\ \ 1\ \ \ \ } \\ 48{,}174 \\ +\ 26{,}591 \\ \hline 74{,}765 \end{array}$$



You can also use an estimate to check that your answer is reasonable.

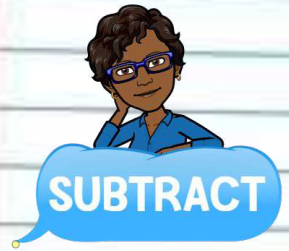


Remember your rounding rules!

Tth	Th	H	T	O		
	7	4	,765		→	70,000
-	2	6	,591		→	- 30,000
	4	8	,174		→	40,000

This problem is rounded to the nearest ten thousands. So 48,174 is reasonable.

BROADUS LEARNINGS



Line up by place value.

The larger number (greatest value) goes on top. MINUEND

The number you are subtracting goes on the bottom. SUBTRAHEND

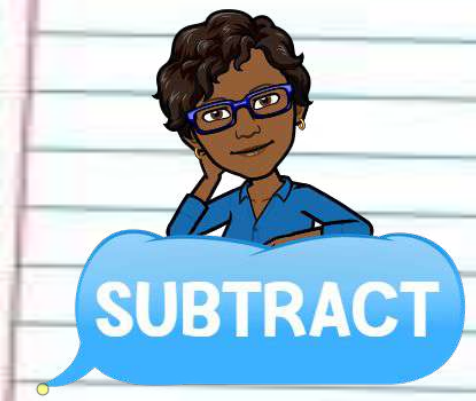
Hth	Tth	Th	H	T	O
				7	11
		8	4	3	1
−		4	4	1	9
					2

1. Subtract the ones place. Regroup if needed.

Regroup: 8 tens + 1 one = 7 tens + 11 ones

11 ones - 9 ones = 2 ones

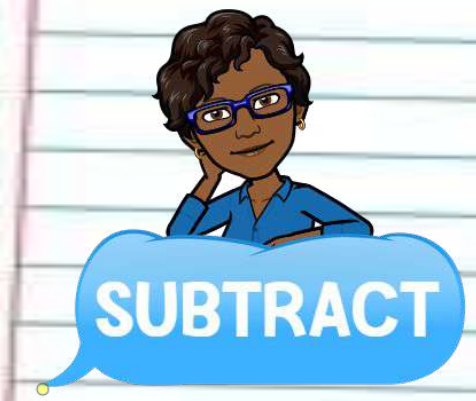
BROADUS LEARNINGS



Hth	Tth	Th	H	T	O
			1	17	11
		8	4	3,	2 8 1
−			4	4,	1 8 9
					9 2

1. Subtract the tens place. Regroup if needed.

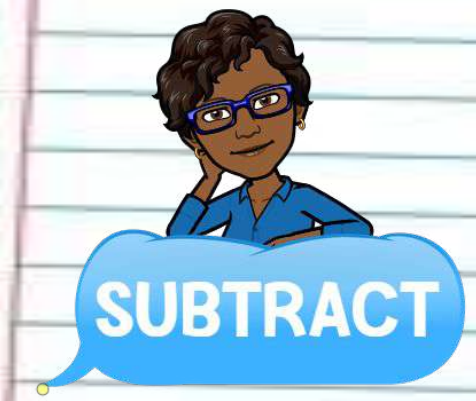
Regroup: 2 hundreds + 7 tens = 1 hundred + 17 tens
17 tens - 8 tens = 9 tens



Hth	Tth	Th	H	T	O
			1	17	11
8	4	3,	~~2~~	~~8~~	~~1~~
−		4	4,	1	8 9
			0	9	2

1. Subtract the hundreds place. Regroup if needed.

1 hundred - 1 hundred = 0 hundreds
No regrouping needed because the minuend is equal to the subtrahend.

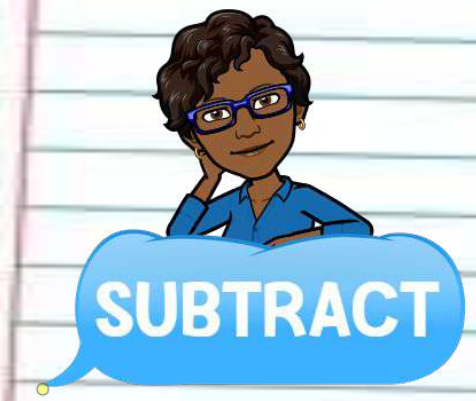


Hth	Tth	Th	H	T	O
	3	13	1	17	11
	8	~~4~~	~~3~~,	~~2~~	~~1~~
-		4	4,	1	89
		9,	0	9	2

1. Subtract the thousands place. Regroup if needed.

Regroup: 4 ten thousands + 3 thousands = 3 thousands + 13 thousands

13 thousands - 4 thousands = 9 thousands

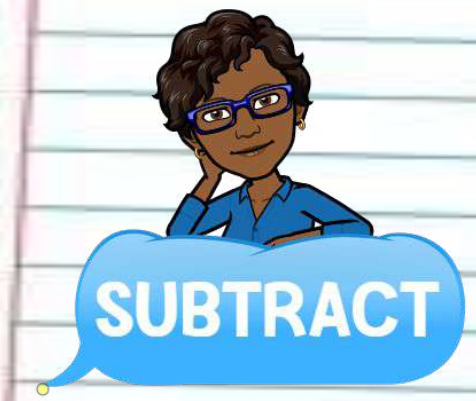


Hth	Tth	Th	H	T	O
7	13	13	1	17	11
~~8~~	~~4~~	~~3~~	~~2~~	~~8~~	~~1~~
	4	4	1	8	9
					2
	9	9	0	9	2

1. Subtract the **ten thousands** place. Regroup if needed.

Regroup: 8 hundred thousands + 3 ten thousands = 7 hundred thousands + 13 ten thousands

13 ten thousands - 4 ten thousands = 9 ten thousands



Hth	Tth	Th	H	T	O
7	13	13	1	17	11
~~8~~	~~4~~	~~3~~,	~~2~~	~~8~~	~~1~~
	4	4,	1	8	9
7	9	9,	0	9	2

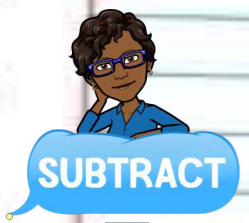
1. Subtract the ten thousands place. Regroup if needed.

7 hundred thousands - 0 hundred thousands = 7 hundred thousands

No regrouping needed because the minuend is equal to the subtrahend.

We will use the inverse operation to check our work. We said that 843,281 - 44,189 = 799,092

If we are correct 799,092 + 44,189 will equal 843,281.



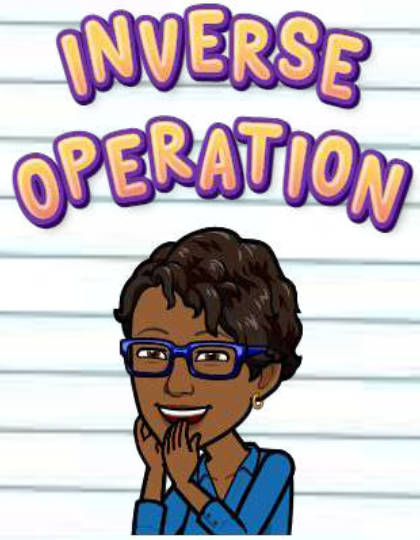
Check

1 1 11

799,092

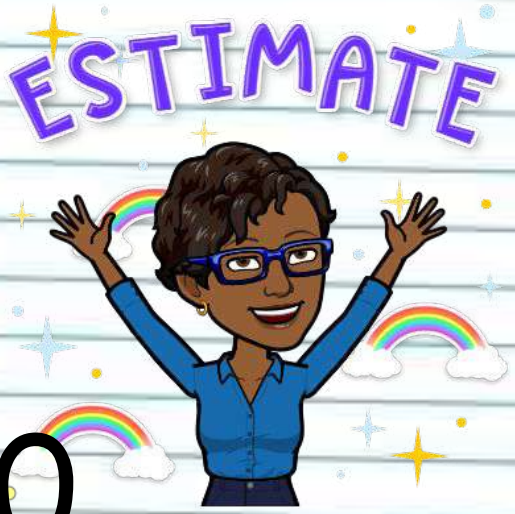
+ 44,189

843,281



BROADUS LEARNINGS

You can also use an estimate to check that your answer is reasonable.



Remember your rounding rules!

Tth	Th	H	T	O		
8	4	3	,	2	8 1	840,000
-	4	4	,	1	8 9	- 40,000
7	9	9	,	0	9 2	800,000

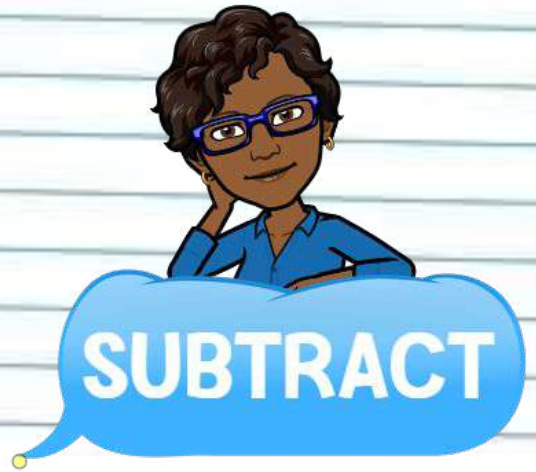
This problem is rounded to the nearest ten thousands. So 799,092 is reasonable.

BROADUS LEARNINGS

Exit Ticket:

It is 6,911 miles from North Carolina to North Korea. It is 2,647 miles from North Carolina to California. How much farther is it to travel to North Korea than California from North Carolina?

Remember to check your answer by using inverse operation and estimation.



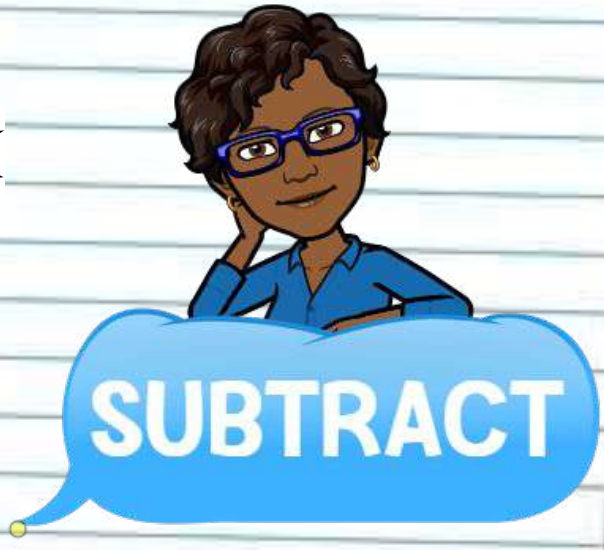
BROADUS LEARNINGS

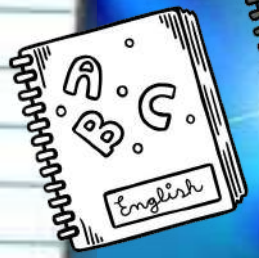
INDEPENDENT PRACTICE:

p 59 Problems 13
p 60 Problems 19, 21

HOMEWORK:

pg. 59 7-12,14
p 60 15, 16





BROADUS LEARNINGS