

4th Grade Unit 1 Part 2: Add & Subtract (Study Guide)

Name _____

Date _____

Study Guide directions:

Answer the questions and compare your answers to the answer key. Ask questions about anything you don't understand. Create similar questions to practice each skill with different numbers and different story problems.

Standard:

13.NBT.4 add and subtract multi-digit whole numbers fluently using the standard algorithm

1. *Be able to calculate the sum or difference of two numbers:*

- What is the sum of 14,509 and 5,599?
- What is the difference of 86,318 and 44,229?
- Solve: $207,315 - 99,327$
- Solve: $689,335 + 63,290$

2. *Identify errors in addition and subtraction calculations:*

$$\begin{array}{r} 601,315 \\ - 343,684 \\ \hline 257,621 \end{array}$$

$$\begin{array}{r} 564,329 \\ + 34,298 \\ \hline 907,309 \end{array}$$

_____	_____
_____	_____
_____	_____
_____	_____

3. *Find missing digits in an equation:*

$$\begin{array}{r} 54,761 \\ + 2\square,486 \\ \hline 79,247 \end{array} \quad \square = \underline{\quad}$$

$$\begin{array}{r} 61,420 \\ - 4\square,716 \\ \hline 18,704 \end{array} \quad \square = \underline{\quad}$$

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Standard:

3.OA.3 solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

4. *Estimate sums or differences:*
 - a. Estimate the sum of 35,987 and 42,175 to the nearest thousand.

 - b. Estimate the difference of 152,334 and 29,963 to the nearest ten thousand.

5. *Solve gain problems (aka “add to” problems) by drawing a diagram and writing an equation with a variable to represent a missing addend.*

The Georgia Aquarium bought 24,616 pounds of krill to feed the fish and penguins for the first 6 months of the year. They bought more krill for the last half of the year. Altogether they have purchased 52,000 pounds of krill. How much krill did they buy during the last half of the year?

6. *Solve compare problems by drawing a diagram and writing an equation with a variable to represent the unknown value.*

Eduardo has \$583 in his bank account. His sister Petra has \$1,284 more than Eduardo. How much does Petra have in her bank account?

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7. *Solve category problems (aka “Put together/take apart” problems) by drawing a diagram and writing an equation to represent a missing addend.*

The cafeteria served 3 kinds of pizza last year. Altogether they sold 23,402 pieces of pizza. Twelve thousand, thirty were cheese pizzas; eight thousand, fifteen were pepperoni; and the rest were sausage. How many pieces of sausage pizza were served last year?

8. *Solve In and Out problems (aka multi-step addition & subtraction problems) by writing an equation with a variable to represent the unknown value.*

- a. Mrs. James had saved \$2,419. She spent \$69 on a new jacket and \$43 on a new dress. When she got her next paycheck, she added another \$154 to her savings account. How much is in Mrs. James’ account?

- b. Jayden’s dad paid their monthly bills. He paid \$180 for electricity, \$65 for gas, and \$102 for the phone bill. He started with \$500. How much money does Jayden’s dad have left? Which expression represents the problem?

$$(e + g + p) - 500 \quad \text{or} \quad 500 - (e + g + p)$$

9. Don’t forget to review the place value study guide.

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Study Guide Answer Key (Problem solving questions may have other acceptable diagrams.)

1. Be able to calculate the sum or difference of two numbers:

e. What is the sum of 14,509 and 5,599? 20,108

f. What is the difference of 86,318 and 44,229? 42,089

g. Solve: $207,315 - 99,327 = \underline{107,988}$

h. Solve: $689,335 + 63,290 = \underline{752,625}$

2. Identify errors in addition and subtraction calculations:

$$\begin{array}{r} 601,315 \\ - 343,684 \\ \hline 257,621 \end{array}$$

The digit in the tens place was changed to a zero when one of the hundreds was regrouped to a ten ($10 - 8 = 2$). The tens digit should have stayed a one, and the answer in the tens column should be 3 ($11 - 8 = 3$).

$$\begin{array}{r} 564,329 \\ + 34,298 \\ \hline 907,309 \end{array}$$

The digits were not lined up correctly. The ones digit for the second addend is lined up under the tens digit for the first addend and the ten thousands digit is lined up in the hundred thousands column.

3. Find missing digits in an equation:

$$\begin{array}{r} 54,761 \\ + 2\square,486 \\ \hline 79,247 \end{array} \quad \square = \underline{4}$$

$$\begin{array}{r} 61,420 \\ - 4\square,716 \\ \hline 18,704 \end{array} \quad \square = \underline{2}$$

4. Estimate sums or differences:

a. Estimate the sum of 35,987 and 42,175 to the nearest thousand.

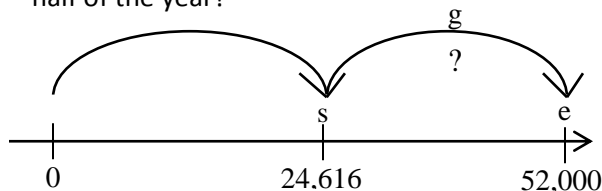
$$36,000 + 42,000 = 78,000$$

b. Estimate the difference of 152,334 and 29,963 to the nearest ten thousand.

$$150,000 - 30,000 = 120,000$$

5. Solve gain problems (aka "add to" problems) by drawing a diagram and writing an equation to represent a missing addend.

The Georgia Aquarium bought 24,616 pounds of krill to feed the fish and penguins for the first 6 months of the year. They bought more krill for the last half of the year. Altogether they have purchased 52,000 pounds of krill. How much krill did they buy during the last half of the year?



$$\begin{aligned} s + g &= e \\ 24,616 + g &= 52,000 \end{aligned}$$

The aquarium bought 27,389 pounds of krill the second half of the year.

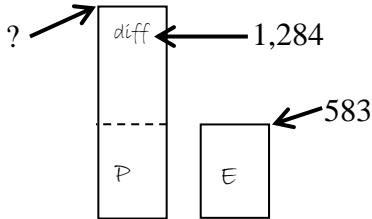
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6. Solve compare problems by drawing a diagram and writing an equation with a variable to represent the unknown value.

Eduardo has \$583 in his bank account. His sister Petra has \$1,284 more than Eduardo. How much does Petra have in her bank account?



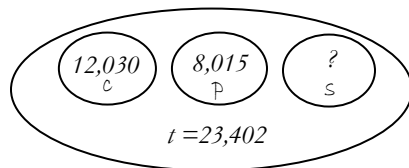
$$p - e = \text{diff} \quad \text{or} \quad e + \text{diff} = p$$

$$p - 583 = 1,284 \quad \text{or} \quad 583 + 1,284 = p$$

Petra has \$1,867 in her bank account.

7. Solve category problems (aka "Put together/take apart" problems) by drawing a diagram and writing an equation to represent a missing addend.

The cafeteria served 3 kinds of pizza last year. Altogether they sold 23,402 pieces of pizza. Twelve thousand, thirty were cheese pizzas; eight thousand, fifteen were pepperoni; and the rest were sausage. How many pieces of sausage pizza were served last year?



$$c + p + s = t$$

$$12,030 + 8,015 + s = 23,402$$

$$20,045 + s = 23,402$$

The cafeteria served 3,357 pieces of sausage pizza last year.

8. Solve In and Out problems (aka multi-step addition & subtraction problems) by writing an equation with a variable to represent the unknown value.

- a. Mrs. James had saved \$2,419. She spent \$69 on a new jacket and \$43 on a new dress. When she got her next paycheck, she added another \$154 to her savings account. How much is in Mrs. James' account?

$$s - (j + d) + a = e$$

$$2,419 - (69 + 43) + 154 = e$$

$$2,419 - 112 + 154 = e$$

$$2,307 + 154 = e$$

$$2,461 = e$$

154	43	
+2419	+ 69	
□	□	□
In	- Out	= End

Mrs. James has \$2,461 in her savings

- b. Jayden's dad paid their monthly bills. He paid \$180 for electricity, \$65 for gas, and \$102 for the phone bill. He started with \$500. How much money does Jayden's dad have left?

Which expression represents the problem?

$(e + g + p) - 500$ or $500 - (e + g + p)$

$$500 - (180 + 65 + 102)$$

$$500 - 347$$

$$153$$

	102	
	65	
500	+ 180	
□	□	□
In	- Out	= End

Jayden's dad has \$153 left.