

TOPIC: SUBTRACTING WHOLE NUMBERS

Solving Subtraction Problems

◆ Subtraction is the operation of finding the **difference** between two numbers.

► The difference tells us how much greater one number is than another.

New

Subtraction

We baked 8 cookies and 5 cookies were eaten. How many cookies are left?



"Take away 5 from 8, how many are left?"

"5 added to what number equals 8?"

$$\begin{array}{r} 8 \\ - 5 \\ \hline \end{array}$$

◆ To *subtract* multi-digit numbers, line up by place value & subtract digits in each place value from right to left.

EXAMPLE

Subtract.

$$\begin{array}{r} 357 \\ - 41 \\ \hline \end{array}$$

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Properties of Subtraction

PROPERTIES OF SUBTRACTION			
Name	Description	Example	Rule
0 Properties	The difference between any number and 0 is that _____ number.	$8 - 0 = \underline{\hspace{1cm}}$	$a - 0 = a$
	The difference between any number and that same number is _____.	$8 - 8 = \underline{\hspace{1cm}}$	$a - a = 0$

♦ Subtraction is **NOT** commutative or associative: order and grouping _____ matter.

PRACTICE

Subtract the following.

(A)

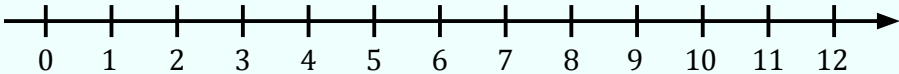
$$\begin{array}{r} 84 \\ - 52 \\ \hline \end{array}$$

(B)

$$\begin{array}{r} 1975 \\ - 203 \\ \hline \end{array}$$

EXAMPLE

Use the number line to find the difference.



(A)

$12 - 4$

(B)

$6 - 6$

(C)

$10 - 9$

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Borrowing to Solve Subtraction Problems

◆ To subtract, if the bottom digit is greater than the top in a given place value, **borrow** from the next place value.

Recall	Subtracting Whole Numbers	New	Subtracting Whole Numbers w/ Borrowing
	$\begin{array}{r} 84 \\ - 52 \\ \hline 32 \end{array}$ 1) Subtract ones place: 4 ones – 2 ones = 2 ones 2) Subtract tens place: 8 tens – 5 tens = 3 tens		$\begin{array}{r} 84 \\ - 36 \\ \hline \end{array}$ 1) Subtract ones place: 6 is _____ than 4, so we must borrow. • Borrow from tens: ____ tens – ____ ten = ____ tens • Add it to ones: ____ ten + ____ ones = ____ ones 2) Subtract tens place: ____ tens – 3 tens = ____ tens

EXAMPLE

Subtract and check the result with addition.

$$\begin{array}{r} 5,092 \\ - 278 \\ \hline \end{array}$$

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EXAMPLE

Find the difference.

$$\begin{array}{r} 9,652 \\ + 4,781 \\ \hline \end{array}$$

PRACTICE

Find the difference.

$$\begin{array}{r} (A) \quad 402 \\ - 52 \\ \hline \end{array}$$

$$\begin{array}{r} (B) \quad 731 \\ - 458 \\ \hline \end{array}$$

EXAMPLE

Find the difference.

$$\begin{array}{r} 83,504 \\ + 27,689 \\ \hline \end{array}$$