

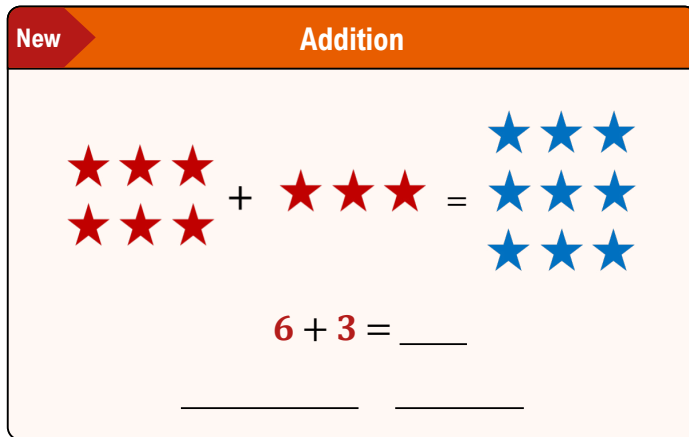
TOPIC: ADDING WHOLE NUMBERS

Solving Addition Problems

◆ Addition is the operation of combining two or more numbers into a single _____ (**sum**).

New

Addition



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

EXAMPLE

Find the following sums.

(**A**) $35 + 24$

(**B**) $378 + 421$

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PRACTICE

Find the following sums.

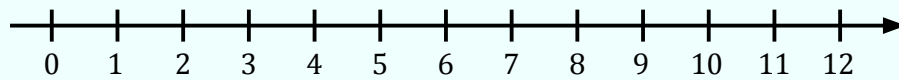
(A) $103 + 72$

(B) $351 + 614$

(C) $5421 + 378$

EXAMPLE

Use the number line to find the sum.



(A) $1 + 5$

(B) $6 + 3$

(C) $4 + 8$

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Carrying (Regrouping) to Solve Addition Problems

◆ When adding, if the sum of digits in a place value is greater than 9, you must **carry** to the *next* place value.

Recall	Adding Whole Numbers	New	Adding Whole Numbers w/ Carrying
	$\begin{array}{r} 35 \\ + 24 \\ \hline 59 \end{array}$ 1) Add ones place: 5 ones + 4 ones = 9 ones 2) Add tens place: 3 tens + 2 tens = 5 tens		$\begin{array}{r} 35 \\ + 47 \\ \hline \end{array}$ 1) Add ones place: 5 ones + 7 ones = ____ ones = ____ ten + ____ ones • Put down the ____ & carry the ____ 2) Add tens place: ____ ten + 3 tens + 4 tens = ____ tens

EXAMPLE

Find the sum.

$$\begin{array}{r} 736 \\ + 419 \\ \hline \end{array}$$

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EXAMPLE

Find the following sum.

$$34,252 + 52,348$$

PRACTICE

Add.

(A)
$$\begin{array}{r} 326 \\ + 47 \\ \hline \end{array}$$

(B)
$$\begin{array}{r} 482 \\ + 3526 \\ \hline \end{array}$$

(C)
$$\begin{array}{r} 42,358 \\ + 536,248 \\ \hline \end{array}$$

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Properties of Addition

◆ To present the properties of addition, we can use letters like *a*, *b*, and *c* to represent any number.

PROPERTIES OF ADDITION			
Name	Description	Example	Rule
<i>0 Property</i>	The sum of 0 and any number is that _____ number.	$8 + 0 = \underline{\hspace{1cm}}$ $0 + 8 = \underline{\hspace{1cm}}$	$a + 0 = a$ $0 + a = a$
<i>Commutative Property</i>	Changing order of addends does _____ their sum.	$3 + 9 = 12 = \underline{\hspace{1cm}}$	$a + b = b + a$
<i>Associative Property</i>	Changing grouping of addends does _____ their sum.	$5 + (8 + 2) = \underline{\hspace{1cm}}$	$a + (b + c) = (a + b) + c$

EXAMPLE Find the sum using the properties of addition.  Hint: Look for pairs of numbers that sum to 10.

$1 + 6 + 4 + 9 + 5 + 0$

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EXAMPLE

Find the sum.

$$364 + 78 + 412$$

PRACTICE

Rewrite the expression using the stated property, then find the sum.

(A) $4 + 7$ commutative property	(B) $(11 + 3) + 9$ associative property	(C) $13 + 0$ addition property of 0
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PRACTICE

Use the properties of addition to find the sum of the expression.

(A) $3 + 18 + 7 + 2 + 11$	(B) $293 + 326 + 4008 + 57$
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