

Review Lessons 5, 6, 7, 8, 9

Name _____

Lesson 2-5 Addition Patterns

Learn

Mena notices that when she adds an even number and an odd number, the sum is odd.

How can she determine if the sum of an even number and an odd number is always odd?

When you add **even numbers** and **odd numbers**, there are patterns in the sums.

	$72 + 13 = 85$
	$18 + 41 = 59$
	$30 + 25 = 55$

When you add two even numbers, the sum is even.

$$246 + 100 = 346$$

$$432 + 224 = 656$$

$$318 + 480 = 798$$

When you add two odd numbers, the sum is even.

$$547 + 155 = 702$$

$$325 + 631 = 956$$

$$421 + 273 = 694$$

When you add an even number and an odd number, the sum is odd.

$$272 + 723 = 995$$

$$546 + 231 = 777$$

$$647 + 244 = 891$$

Math is... Generalizations

Why is it true that the sum of two odd numbers is always even?

What makes the equation true? Write *even* or *odd*. Then write two equations with 3-digit numbers to support your answer.

1. _____ = even + even

2. odd + even = _____

3. odd + _____ = even

4. even + odd = _____

5. even + _____ = even

6. _____ = odd + odd

What is the sum? Use patterns to help justify your answer.

7. $486 + 123 =$ _____

8. $154 + 272 =$ _____

Lesson 2-6

Use Partial Sums to Add

► **One Way** You can write the addends in a row.

$$\begin{aligned} 367 + 145 &= ? \\ 300 + 100 &= 400 \\ 60 + 40 &= 100 \\ 7 + 5 &= 12 \\ 400 + 100 + 12 &= 512 \end{aligned}$$

► **Another Way** You can stack the addends.

	367	
	+ 145	
300 + 100	<u>400</u>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">partial sums</div>
60 + 40	100	
7 + 5	+ <u>12</u>	
	512	

How can you decompose each addend? What is the sum?

1. $247 + 564 = \underline{\hspace{2cm}}$

2.
$$\begin{array}{r} 815 \\ + 148 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 729 \\ + 148 \\ \hline \end{array}$$

4. $327 + 176 = \underline{\hspace{2cm}}$

5. Whitney uses partial sums to add. Look at her work to determine which two numbers were in her original equation.

$$\begin{aligned} \underline{\hspace{2cm}} + \underline{\hspace{2cm}} &= 598 \\ 200 + 300 &= 500 \\ 10 + 80 &= 90 \\ 6 + 2 &= 8 \\ 500 + 90 + 8 &= 598 \end{aligned}$$

Lesson 2-7 Decompose to Subtract



► **One Way** You can decompose one number by place value.

$$353 - 184 = ?$$

$$353 - 100 = 253$$

$$253 - 80 = 173$$

$$173 - 4 = 169$$

$$353 - 184 = 169$$

► **Another Way** You can decompose one number in a different way.

$$353 - 184 = ?$$

$$353 - 153 = 200$$

$$200 - 30 = 170$$

$$170 - 1 = 169$$

$$353 - 184 = 169$$

How can you decompose the number in 2 ways?

1. 367

2. 876

How can you decompose one number to subtract? Why did you choose that way?

3. $495 - 122$

4. $639 - 370$

How can you find the difference? Show the strategy you used.

5. $284 - 182 =$ _____

6. _____ $= 333 - 114$

7. $502 - 382 =$ _____

8. $744 - 466 =$ _____

**Adjust Numbers to
Add or Subtract****Adjust Addition Equations**

$$224 + 109 = ?$$

$$\begin{array}{cc} \boxed{-1} & \boxed{+1} \\ \downarrow & \downarrow \end{array}$$

$$223 + 110 = 333$$

Subtract from one addend and add that amount to the other.

Adjust Subtraction Equations

$$333 - 212 = ?$$

$$\begin{array}{cc} \boxed{-2} & \boxed{-2} \\ \downarrow & \downarrow \end{array}$$

$$331 - 210 = 121$$

Subtract or add the same amount to both numbers.

How can you adjust the equation to solve?

1. $272 - 99 =$ _____

2. $139 + 216 =$ _____

3. $847 - 332 =$ _____

4. $398 + 147 =$ _____

5. $491 - 226 =$ _____

6. $129 + 139 =$ _____

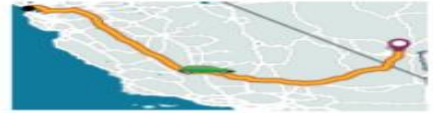
Lesson 2-9

Use Addition to Subtract

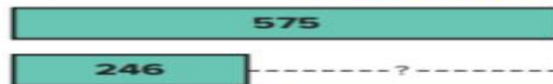
Learn

Adaline and her family are driving 575 miles to visit her grandmother. They drive 246 miles and stop for lunch.

How can you find how many miles they have left to drive?



You can represent the problem with a **bar diagram**.



You can write a subtraction equation with an unknown difference.

$$575 - 246 = ?$$

$$575 - 246 = 329$$

You can write an addition equation with an unknown addend.

$$246 + ? = 575$$

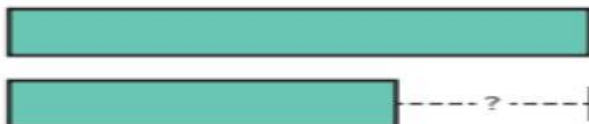
$$246 + 329 = 575$$

How can you write a related addition equation for the subtraction equation?

- $635 - 202 = ?$ _____
- $400 - 151 = ?$ _____
- $825 - 134 = ?$ _____
- Error Analysis** Jayla knows she can use addition to subtract. She adds $301 + 447$ to find the difference of $447 - 301$. How can you help her understand how to use this strategy?

- On Monday, 549 people visited the aquarium. On Friday, 823 people visited the aquarium. How many more people visited the aquarium on Friday?

- How can you fill in the bar diagram to represent the problem?



- How can you write an equation with an unknown to represent the bar diagram?