Subtraction with Regrouping

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Subtraction with regrouping is used when the digit in the top number is smaller than the digit below it. We borrow 1 from the next left place value to subtract properly. This is also called borrowing subtraction.

When Do We Regroup?

We regroup when we cannot subtract a smaller digit from a bigger one in the same place value.

Example: In 32 – 19, we cannot subtract 9 from 2, so we borrow from the tens place.

Steps to Do Regrouping

- Step 1: Start from the ones place
- Step 2: If the top digit is smaller, borrow 1 from the left
- Step 3: Reduce the digit you borrowed from by 1
- Step 4: Add 10 to the place where you borrowed
- Step 5: Subtract as usual and move to the next digit

Properties of Subtraction

Subtracting 0 from a number gives the same number

Subtracting a number from itself gives 0

Subtraction is not commutative

Example 1:

Question: Subtract 4,152 from 6,307

Solution: 6307 – 4152

Start from ones: 7 – 2 = 5

Tens: $0 - 5 \rightarrow$ cannot do, so borrow 1 from $3 \rightarrow$ becomes 10 - 5 = 5

Now hundreds: 2 left in hundreds (3 became 2 after borrowing), 2 - 1 = 1

Thousands: 6 – 4 = 2

6,307 - 4,152 = 2,155

Answer: = 2155

Example 2:

Question: Subtract $\frac{2}{3}$ from $\frac{5}{3}$

Solution:

Denominators are the same, so subtract numerators

$$5 - 2 = 3$$

 $\frac{5}{3} - \frac{2}{3} = 1$
Answer $= \frac{3}{3} = 1$

Summary Points

- Subtraction with regrouping is used when the top digit is smaller than the bottom digit
- We borrow 1 from the next left digit and adjust the values
- Always start subtraction from the ones place
- Subtracting a number from itself gives zero
- Subtracting fractions is possible only when denominators are the same