

SUBTRACTING MIXED NUMBERS WITH COMMON DENOMINATORS WITHOUT BORROWING

ANSWERS

Subtract the mixed numbers. Make sure the final answer is in simplest form.

HELPFUL EXAMPLE #1

$$5 \frac{4}{7} - 2 \frac{3}{7} \quad \text{YOU'RE SUBTRACTING MIXED NUMBERS WHICH MEANS YOU HAVE WHOLE NUMBERS AND FRACTIONS.}$$

$$\frac{4}{7} - \frac{3}{7} \quad \text{FIRST, CHECK IF YOU CAN SUBTRACT THE FRACTIONS.}$$

$$\frac{4}{7} - \frac{3}{7} = \frac{1}{7}$$



YES, $\frac{4}{7}$ IS BIGGER THAN $\frac{3}{7}$ AND THEY HAVE COMMON DENOMINATORS.

$$5 - 2 = \boxed{3} \quad \text{SECOND, QUICKLY SUBTRACT THE WHOLE NUMBERS.}$$

$$3 \text{ and } \frac{1}{7} = 3 \frac{1}{7} \quad \text{LAST, PUT THE TWO ANSWERS TOGETHER. MAKE SURE IT IS IN SIMPLEST FORM.}$$

REMEMBER, FRACTIONS MUST HAVE THE SAME DENOMINATORS BEFORE THEY CAN BE ADDED OR SUBTRACTED. ALSO WHEN YOU'RE SUBTRACTING, IF THE FIRST FRACTION IS TOO SMALL YOU WILL HAVE TO BORROW FROM THE WHOLE NUMBER. BORROWING IS COVERED IN EXAMPLE #2.

Now your turn.

1. $6 \frac{5}{6} - 3 \frac{1}{6}$
 $3 \frac{2}{3}$

2. $7 \frac{7}{9} - 2 \frac{5}{9}$
 $5 \frac{2}{9}$

3. $4 \frac{11}{15} - \frac{8}{15}$
 $4 \frac{1}{5}$

4. $9 \frac{7}{8} - 5 \frac{3}{8}$
 $4 \frac{1}{2}$

5. $5 \frac{13}{20} - 3 \frac{13}{20}$
 2

6. $8 \frac{11}{12} - 8 \frac{7}{12}$
 $\frac{1}{3}$

7. $7 \frac{15}{16} - \frac{5}{16}$
 $7 \frac{5}{8}$

8. $6 \frac{4}{5} - 6 \frac{2}{5}$
 $\frac{2}{5}$

9. $4 \frac{7}{10} - 2 \frac{1}{10}$
 $2 \frac{3}{5}$

Before you move on to the next page, try this problem (borrowing with fractions and whole numbers).

Bruno needs to work for 2 hours and 30 minutes on his homework. He has already worked 45 minutes. How much time does he have left? How would you solve this? Do you see that there is only 30 minutes but we'll need to subtract 45 minutes. How will we change one hour to minutes so we can subtract? Show your work and explain how you borrowed. A minute is a fraction of an hour.

1 HOUR AND 45 MINUTES

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ANSWERS

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HELPFUL EXAMPLE #2

$9 \frac{1}{3} - 4 \frac{2}{3}$ THIS PROBLEM IS A LITTLE MORE DIFFICULT BECAUSE THE FIRST FRACTION IS TOO SMALL.

$\frac{1}{3} - \frac{2}{3}$ **FIRST**, CHECK IF YOU CAN SUBTRACT THE FRACTIONS.

NO, $\frac{1}{3}$ IS TOO SMALL AND YOU NEED TO BORROW FROM THE WHOLE NUMBER SO YOU CAN SUBTRACT $\frac{2}{3}$ FROM IT.

YOU WILL NEED TO TAKE 1 AWAY FROM THE 9 AND GIVE IT TO THE $\frac{1}{3}$. THEN CHANGE THE 1 TO A FRACTION WITH THE SAME DENOMINATOR AND NUMERATOR SO IT STILL MEANS 1.

↳ EXAMPLES: $\frac{2}{2} \frac{3}{3} \frac{4}{4} \frac{5}{5}$ AND SO ON... ALL MEAN 1.

THIS IS WHAT NEEDS TO BE DONE.

$$\begin{aligned} 9 \frac{1}{3} &= 8 + \boxed{1} + \frac{1}{3} \\ &= 8 + \boxed{\frac{3}{3}} + \frac{1}{3} \\ &= 8 \frac{4}{3} \end{aligned}$$

THE 1 WAS CHANGED TO $\frac{3}{3}$, COMMON DENOMINATOR.

IT STILL EQUALS 1 BUT NOW IT CAN BE GIVEN TO THE $\frac{1}{3}$.

$9 \frac{1}{3}$ IS THE SAME AS $8 \frac{4}{3}$

$8 \frac{4}{3} - 4 \frac{2}{3}$

NOW THE PROBLEM LOOKS LIKE THIS AND YOU CAN FOLLOW THE STEPS IN EXAMPLE #1 TO SUBTRACT THESE TWO MIXED NUMBERS.

$\frac{4}{3} - \frac{2}{3} = \boxed{\frac{2}{3}}$

FIRST, SUBTRACT THE FRACTIONS.

$8 - 4 = \boxed{4}$

SECOND, SUBTRACT THE WHOLE NUMBERS.

4 and $\frac{2}{3} = 4 \frac{2}{3}$

LAST, PUT THE TWO ANSWERS TOGETHER. IS IT IN SIMPLEST FORM?

Now your turn.

1. $3 \frac{4}{9} - 1 \frac{7}{9}$
 $1 \frac{2}{3}$

2. $8 \frac{14}{15} - 6 \frac{8}{15}$
 $2 \frac{2}{5}$

3. $7 \frac{8}{11} - 2 \frac{10}{11}$
 $4 \frac{9}{11}$

4. $9 \frac{3}{8} - \frac{5}{8}$
 $8 \frac{3}{4}$

5. $5 \frac{9}{14} - 4 \frac{13}{14}$
 $\frac{5}{7}$

6. $4 \frac{5}{18} - 2 \frac{11}{18}$
 $1 \frac{2}{3}$