ADDING & SUBTRACTING FRACTIONS | Day 1

ADDING & SUBTRACTING FRACTIONS WITH LIKE DENOMINATORS

RULES:

- When the denominators are the same you just add the numerators together.
- Write the new numerator over the denominator.
- Simplify if necessary. (can use the cake method)

ADDING & SUBTRACTING WITH LIKE DENOMINATORS

$$\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$$

ADDING & SUBTRACTING WITH LIKE DENOMINATORS

$$\frac{9}{14} - \frac{5}{14} = \frac{4}{14}$$

Simplify

$2\overline{)\,4 \quad 14}$
$\quad\;\; 2 \quad 7$

Answer: $\frac{2}{7}$

ADDING & SUBTRACTING WITH LIKE DENOMINATORS

$$\frac{8}{9} + \frac{3}{9} = \frac{11}{9}$$

$$9\overline{)\,11}\;\;1$$
$$\underline{9}$$
$$2$$

This is an improper fraction (the top is bigger than the bottom), so we want to change it to a mixed number.

To do this, divide the bottom into the top.

Answer: $1\frac{2}{9}$

YOU TRY:

$\frac{7}{12} - \frac{5}{12} = \frac{1}{6}$

$\frac{8}{15} + \frac{12}{15} = 1\frac{1}{3}$

$\frac{4}{7} + \frac{1}{7} = \frac{5}{7}$

$\frac{15}{18} - \frac{13}{18} = \frac{1}{9}$

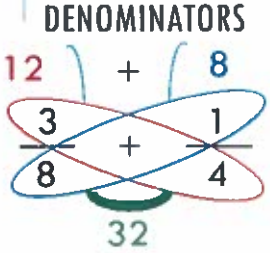
ADDING & SUBTRACTING FRACTIONS WITH UNLIKE DENOMINATORS

RULES

Use the butterfly method:

- Multiply the numerator of the first fraction by the denominator of the second fraction.
- Multiply the numerator of the second fraction by the denominator of the first fraction.
- Multiply the denominators together
- Simplify if needed (use cake method)

ADDING & SUBTRACTING WITH UNLIKE DENOMINATORS



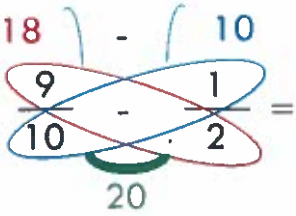
$= \frac{20}{32}$

Simplify

2	20	32
2	10	16
	5	8

Answer: $\frac{5}{8}$

ADDING & SUBTRACTING WITH UNLIKE DENOMINATORS



$= \frac{8}{20}$

Simplify

2	8	20
2	4	10
	2	5

Answer: $\frac{2}{5}$

YOU TRY:

$\frac{3}{4} - \frac{2}{7} = \frac{13}{28}$

$\frac{8}{9} + \frac{1}{2} = 1\frac{7}{18}$

$\frac{7}{8} + \frac{3}{4} = 1\frac{5}{8}$

$\frac{9}{11} - \frac{1}{2} = \frac{7}{22}$

ADDING & SUBTRACTING FRACTIONS | Day 2

ADDING & SUBTRACTING MIXED NUMBERS

RULES FOR LIKE DENOMINATORS

- When the denominators are the same you just add the numerators together.
- Write the new numerator over the denominator.
- Then add the whole numbers
- Simplify if necessary. (can use the cake method)

ADDING & SUBTRACTING MIXED NUMBERS WITH LIKE DENOMINATORS

$$3\frac{5}{6} + 4\frac{1}{6} = 7\frac{6}{6} = 8$$

ADDING & SUBTRACTING MIXED NUMBERS WITH LIKE DENOMINATORS

$$4\frac{5}{8} - 2\frac{3}{8} = 2\frac{2}{8}$$

$2\overline{)2 \quad 8}$

$1 \quad 4$

$$2\frac{1}{4}$$

RULES FOR UNLIKE DENOMINATORS

Use the butterfly method:

- Turn the mixed numbers into improper fractions
- Multiply the numerator of the first fraction by the denominator of the second fraction.
- Multiply the numerator of the second fraction by the denominator of the first fraction.
- Multiply the denominators together
- Simplify if needed (use cake method)

ADDING & SUBTRACTING MIXED NUMBERS WITH UNLIKE DENOMINATORS

$$5\frac{9}{10} + 3\frac{1}{2} =$$

Change each mixed number into an improper fraction.

ADDING & SUBTRACTING MIXED NUMBERS WITH UNLIKE DENOMINATORS

$$\frac{59}{10} + \frac{7}{2} = \frac{188}{20}$$

118 + 70

20

ADDING & SUBTRACTING MIXED NUMBERS WITH UNLIKE DENOMINATORS

$$\frac{188}{20} = 9\frac{8}{20}$$

$$20\overline{)188}\quad 9,\ 180,\ 8$$

This is an improper fraction (the top is bigger than the bottom), so we want to change it to a mixed number.

To do this, divide the bottom into the top.

ADDING & SUBTRACTING MIXED NUMBERS WITH UNLIKE DENOMINATORS

$$5\frac{9}{10} + 3\frac{1}{2} = 9\frac{8}{20} = 2\frac{2}{5}$$

Simplify

$$2\overline{)8\quad 20}$$
$$2\overline{)4\quad 10}$$
$$2\quad 5$$

$$2\frac{2}{5}$$

ADDING & SUBTRACTING MIXED NUMBERS WITH UNLIKE DENOMINATORS

$$8\frac{1}{3} - 1\frac{5}{6} =$$

Change each mixed number into an improper fraction.

ADDING & SUBTRACTING MIXED NUMBERS WITH UNLIKE DENOMINATORS

$$\frac{25}{3} - \frac{11}{6} = \frac{117}{18}$$

150 - 33

18

ADDING & SUBTRACTING MIXED NUMBERS WITH UNLIKE DENOMINATORS

$\frac{117}{18} = 6\frac{9}{18}$

$18\overline{)117}$ 6, -108, 9

This is an improper fraction (the top is bigger than the bottom), so we must exchange it to a mixed number.

To do this, divide the bottom into the top.

ADDING & SUBTRACTING MIXED NUMBERS WITH UNLIKE DENOMINATORS

$8\frac{1}{3} - 1\frac{5}{6} = 6\frac{9}{18} = 6\frac{1}{2}$

Simplify: $3\overline{)9 \quad 18}$, $3\overline{)3 \quad 6}$, $1 \quad 2$

Answer: $6\frac{1}{2}$

YOU TRY:

$4\frac{5}{8} - 2\frac{3}{8} = 2\frac{1}{4}$ $\quad 7 - 5\frac{1}{2} = 1\frac{1}{2}$

$1\frac{3}{4} + 1\frac{2}{7} = 3\frac{1}{28}$ $\quad 6 + 3\frac{3}{5} = 9\frac{3}{5}$