2.3 Adding and Subtracting Rational #s

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If the denominators (bottom #s) are the same, it is easy - just add or subtract the tops (numerators). Then reduce if you can.

$\frac{1}{4} + \frac{5}{4} = \frac{6 \div 2}{4 \div 2} = \frac{3}{2} = 1\frac{1}{2}$

← mixed number

← reduced, improper fraction

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

$\frac{7}{10} + \frac{4}{10} = \frac{11}{10} = 1\frac{1}{10}$

✓ ✓

$\frac{28}{13} - \frac{2}{13} = \frac{26 \div 13}{13 \div 13} = \frac{2}{1} = 2$

$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} \ldots$

If the denominators are different:

Find a common denominator first, then rewrite the fractions with the same denominator, then add or subtract.

1) $\frac{1 \times 3}{4 \times 3} + \frac{2 \times 4}{3 \times 4} = \frac{3}{12} + \frac{8}{12} = \frac{11}{12}$

2) $+5 - 4$

2) $\frac{+5}{+3} + \frac{4}{+5}$

$\frac{5\times5}{3\times5} + \frac{4\times3}{5\times3} = \frac{25}{15} + \frac{12}{15} = \frac{37}{15} = 2\frac{7}{15}$ ✓ ✓

3) $1\frac{5}{6} - 3\frac{7}{8}$

$\frac{11\times4}{6\times4} - \frac{31\times3}{8\times3} = \frac{44}{24} - \frac{93}{24} = \frac{-49}{24} = -2\frac{1}{24}$

$^{8}\cancel{9}13$
-44
49

Practice pg 68 #5, 6, 12, 14, 17, 20