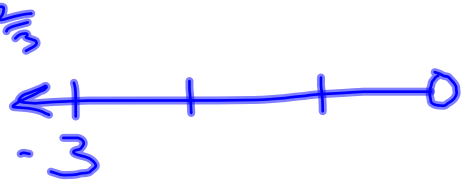
Adding / Subtracting fractions:

- Convert all mixed numbers into full fractions

$5\frac{1}{2}$ (mixed #)



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

$$\frac{-3}{1}\left(\frac{1}{1}\right) + \frac{-2}{3} = \frac{-3}{1}\left(\frac{1}{1}\right) + \frac{-2}{3} =$$

$$\frac{-3}{1}\left(\frac{3}{3}\right) + \frac{-2}{3} = \frac{-9}{3} + \frac{-2}{3} = \frac{-11}{3}$$

$$-3\frac{2}{3} = -\frac{2+(3\cdot 3)}{3} = -\frac{11}{3}$$

ex:

$5\frac{7}{8} = {}^{40+7=\frac{47}{8}}$ $\frac{47}{8}$

$-6\frac{1}{4} = {}^{24+1=\frac{25}{4}}$ $\frac{-25}{4}$

$21\frac{4}{5} = \frac{109}{5}$

- Adding or subtracting fractions requires a common denominator

$$\frac{4}{5} + \frac{7}{5} = \frac{11}{5}$$

$$\frac{2}{3} + \frac{6}{9} = ?$$

$$\frac{2}{3}(1) + \frac{6}{9}(1) = \left[\frac{2}{3}\left(\frac{6}{6}\right) + \frac{6}{9}\left(\frac{2}{2}\right)\right]$$

$$\frac{2}{3}\left(\frac{9}{9}\right) + \frac{6}{9}\left(\frac{3}{3}\right) =$$

$$\frac{18}{27} + \frac{18}{27} = \frac{36}{27} \div \frac{9}{9} = \frac{4}{3}$$

Practice:

- $-\frac{2}{3}+\frac{4}{5}=-\frac{10}{15}+\frac{12}{15}=\frac{2}{15}$

- $4\frac{7}{12}-\frac{6}{14}$

  $\frac{55}{12}-\frac{6}{14}=\frac{385}{84}-\frac{36}{84}=\frac{349}{84}$

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

  $-\frac{13}{4}+\frac{47}{6}=-\frac{39}{12}+\frac{94}{12}=\frac{55}{12}$

Multiplication rules:

- multiply two #'s with same sign, the answer is positive

$-5 \times -9 = 45$

- multiply two #'s with opposite signs, the answer is negative

$-101 \times 4 = -404$

- multiply # by 1 = same number
- multiply # by 0 = 0
- multiply # by -1 = opposite (inverse), reverse the sign!

$5 \times -1 = -5$

$-322.146 \times -1 = 322.146$

Homework:

p. 77; 18, 22, 43, 54

p. 82; 12, 14, 32, 34, 45

p. 91; 3-15 (every 3rd), 44