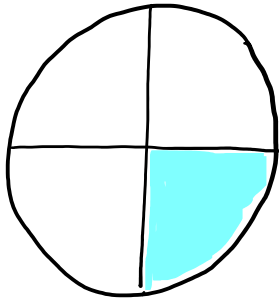


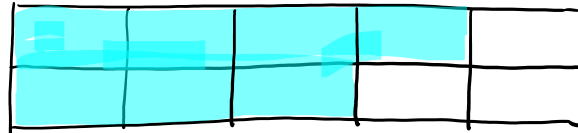
Section R.2: Adding and Subtracting Fractions

Tuesday, January 8, 2019 1:58 PM

Consider the fractions represented by the shaded regions below:



$\frac{1}{4}$



$\frac{7}{10}$

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

We need to rewrite these fractions into equivalent fractions that use the same size pieces. The new size should be the Lowest Common Multiple of the original sizes.

multiples of 4: 4, 8, 12, 16, 20, 24, 28, 32, ...
" " 10: 10, 20, 30, 40, 50, 60, 70, ...

$$\begin{aligned} \frac{1}{4} + \frac{7}{10} &= \frac{1}{4} \left(\frac{5}{5} \right) + \frac{7}{10} \left(\frac{2}{2} \right) \\ &= \frac{5}{20} + \frac{14}{20} \end{aligned}$$

$$= \frac{5}{20} + \frac{14}{20}$$

$$= \frac{19}{20}$$

note: if you said instead:

$$\frac{1}{4} + \frac{7}{10} = \frac{1}{4} \left(\frac{10}{10} \right) + \frac{7}{10} \left(\frac{4}{4} \right)$$

$$= \frac{10}{40} + \frac{28}{40}$$

$$= \frac{38}{40} \begin{matrix} +2 \\ -2 \end{matrix} = \frac{19}{20}$$

note: subtraction works the same way

examples: add or subtract as indicated

$$a) 1 \frac{2}{3} + 4 \frac{5}{6}$$

method 1:

$$\frac{5}{3} + \frac{29}{6}$$

$$\frac{10}{6} + \frac{29}{6}$$

method #2

$$\frac{2}{3} + \frac{5}{6}$$

$$\frac{4}{6} + \frac{5}{6}$$

$$\frac{10}{6} + \frac{27}{6}$$

$$\frac{37}{6} \div 3$$

$$\frac{13}{2} = 6\frac{1}{2}$$

$$\frac{7}{6} +$$

$$\frac{9}{6}$$

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

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