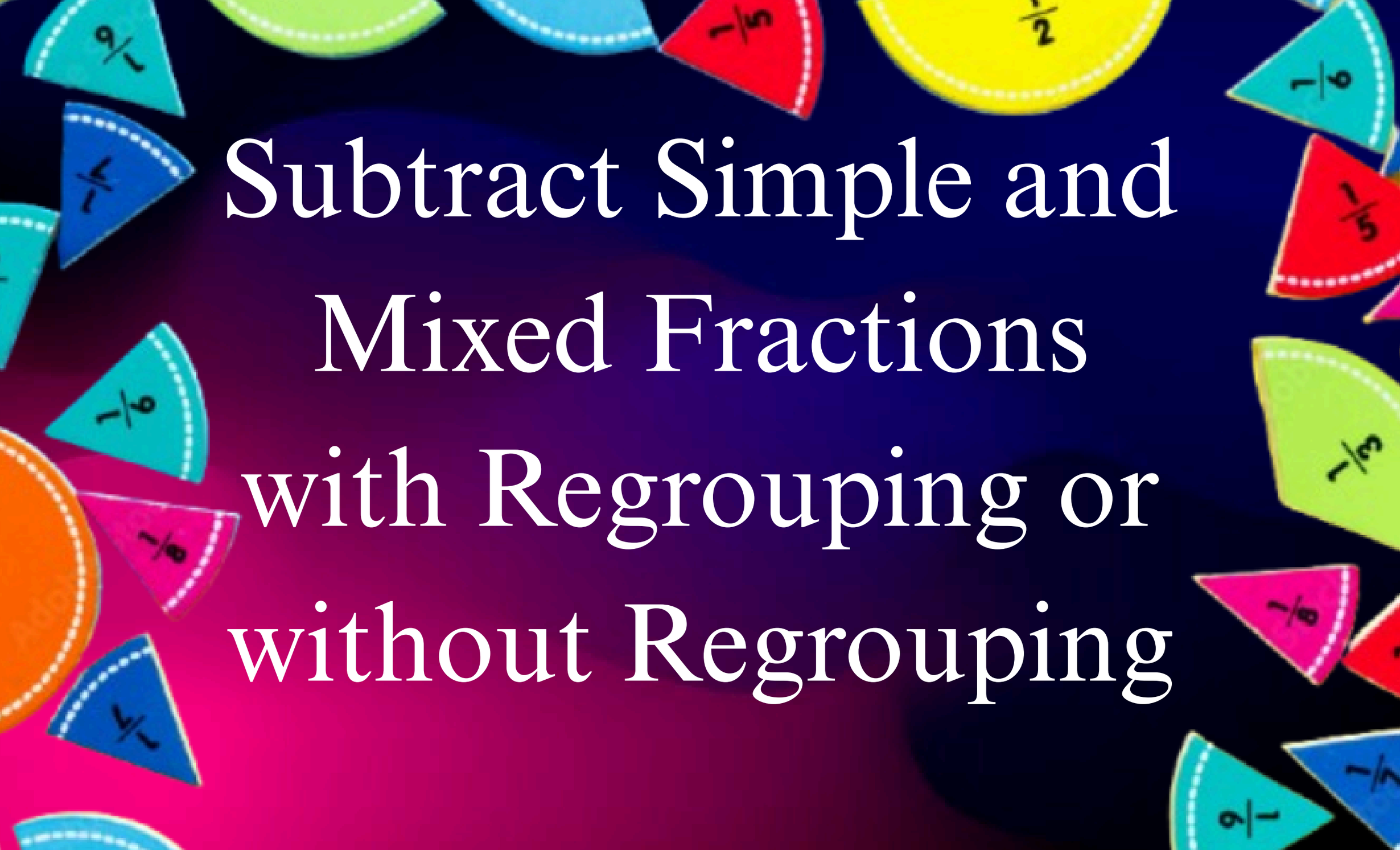
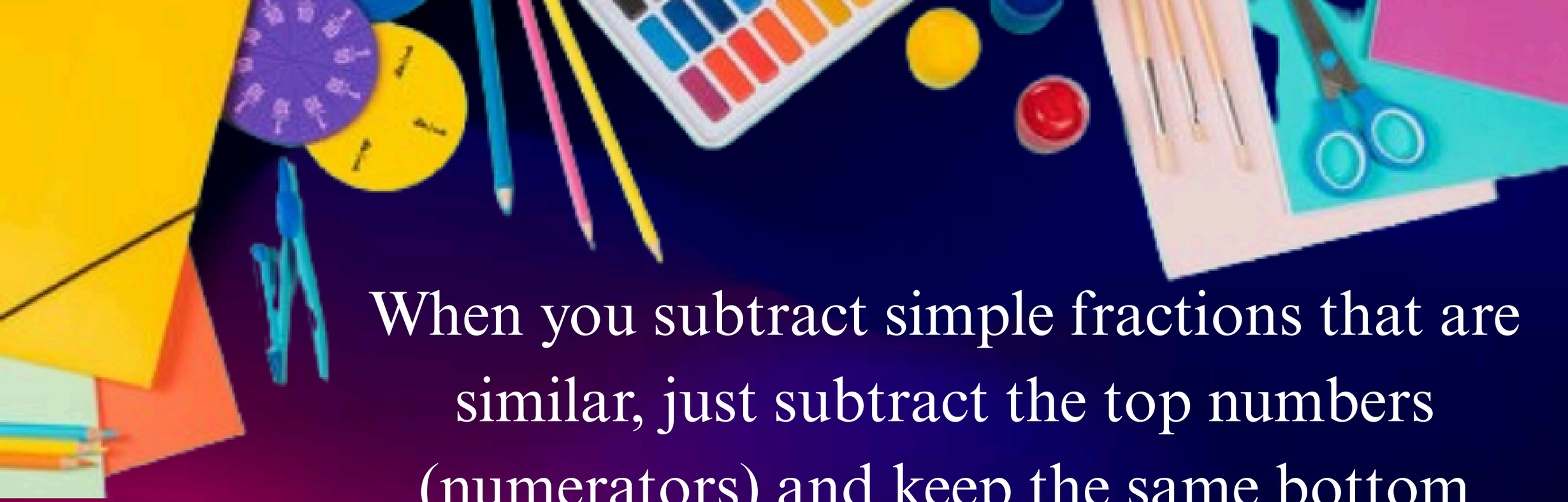
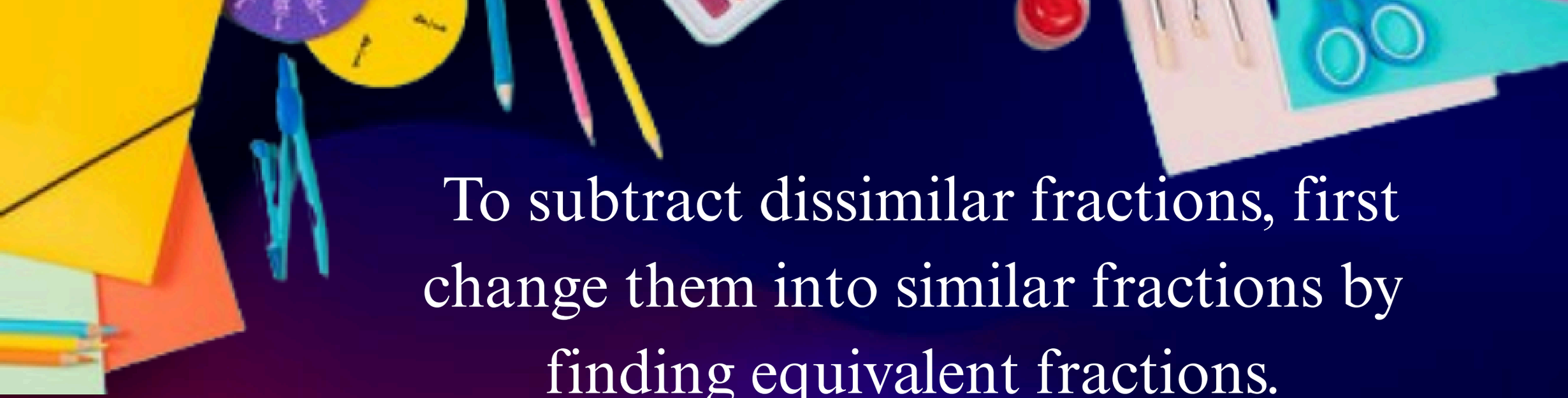

Subtract Simple and
Mixed Fractions
with Regrouping or
without Regrouping



When you subtract simple fractions that are similar, just subtract the top numbers (numerators) and keep the same bottom number (denominator). Then simplify the fractions after that.

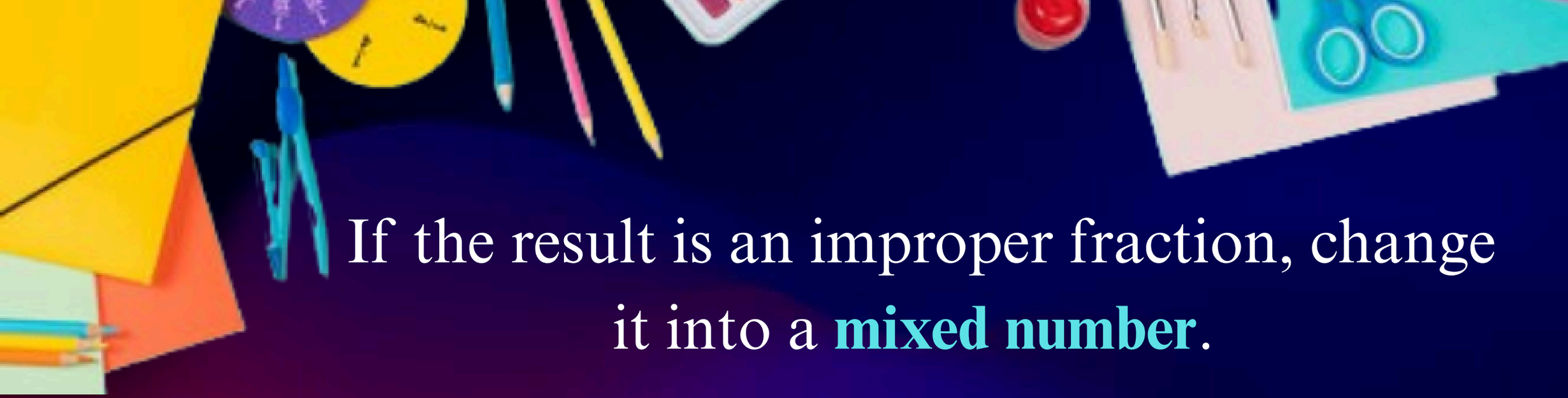
Example: $\frac{3}{7} - \frac{1}{7} = \frac{3-1}{7} = \frac{1}{7}$



To subtract dissimilar fractions, first change them into similar fractions by finding equivalent fractions.

Example: $\frac{5}{8}$ and $\frac{1}{4}$ find the equivalent fraction of $\frac{5}{8}$ with the same denominator as $\frac{1}{4}$

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



If the result is an improper fraction, change it into a **mixed number**.

Example: $\frac{9}{5} - \frac{3}{5} = \frac{9-3}{5} = \frac{6}{5}$

change the improper fraction $\frac{6}{5}$ to a mixed number

So, $\frac{6}{5}$ as a mixed number is $1\frac{1}{5}$

If you know how to subtract similar and dissimilar fractions, you can easily subtract mixed numbers too. Just subtract the whole numbers together and then subtract the fraction parts.

Example: $2\frac{3}{5} - 1\frac{1}{5}$

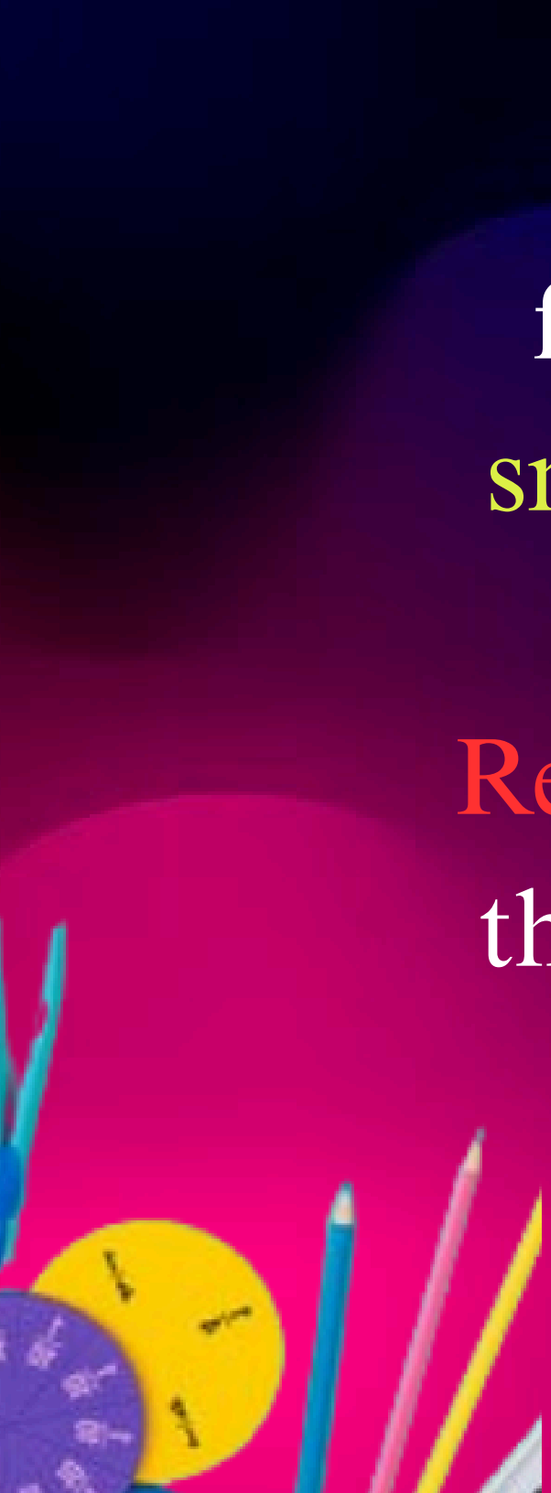
Solution: $2\frac{3}{5} - 1\frac{1}{5} = (2-1) + (\frac{3}{5} - \frac{1}{5})$

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

Therefore

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

Sometimes, you can't subtract the fraction parts because the minuend is smaller than the subtrahend. When this happens, you can use regrouping. Regrouping means you borrow one from the whole number to make the minuend fraction larger than the subtrahend fraction.



Example: $5\frac{1}{9} - 3\frac{4}{9}$

Write in vertical form: $5\frac{1}{9} \rightarrow 4\frac{10}{9}$ Borrow 1 from 5 and change to $\frac{9}{9}$

$-3\frac{4}{9}$ $-3\frac{4}{9}$ fraction $1 = \frac{9}{9}$ then add to $\frac{1}{9}$

$$4\frac{10}{9}$$
$$-3\frac{4}{9}$$
$$1\frac{6}{9} \text{ or } 1\frac{2}{3}$$

Subtract the whole numbers then subtract the fractions