

LESSON 19

Addition Of Unlike Fractions (One Denominator Is A Multiple Of The Other)

Unlike fractions are fractions with different denominators.

The sum of two or more unlike fractions can be found by making equivalent fractions with a common denominator and then adding the numerators.

When one fraction has a denominator that is a multiple of the other, find an equivalent fraction that will make its denominator the same.

Example: Add

$$\frac{3}{10} + \frac{2}{5}$$

$$\text{Change } \frac{2}{5} \text{ To } \frac{4}{10}$$

$$\text{Since } \frac{2}{5} \times \frac{2}{2} = \frac{4}{10}$$

$$\frac{3}{10} + \frac{4}{10} = \frac{7}{10}$$

Add Each Pair Of Unlike Fractions

One Denominator Is A Multiple Of The Other

1. $\frac{1}{2} + \frac{1}{3}$ $\frac{3 + 2}{6} = \frac{5}{6}$	6. $\frac{2}{3} + \frac{1}{5}$ $\frac{10 + 3}{15} = \frac{13}{15}$	11. $\frac{1}{2} + \frac{4}{9}$ $\frac{9 + 8}{18} = \frac{17}{18}$
2. $\frac{2}{3} + \frac{3}{4}$ $\frac{8 + 9}{12} = \frac{17}{12}$	7. $\frac{1}{2} + \frac{2}{9}$ $\frac{9 + 4}{18} = \frac{13}{18}$	12. $\frac{1}{3} + \frac{5}{8}$ $\frac{8 + 15}{24} = \frac{23}{24}$
3. $\frac{1}{2} + \frac{1}{9}$ $\frac{9 + 2}{18} = \frac{11}{18}$	8. $\frac{1}{3} + \frac{3}{8}$ $\frac{8 + 9}{24} = \frac{17}{24}$	13. $\frac{1}{2} + \frac{2}{5}$ $\frac{5 + 4}{10} = \frac{9}{10}$
4. $\frac{2}{3} + \frac{1}{8}$ $\frac{16 + 3}{24} = \frac{19}{24}$	9. $\frac{1}{2} + \frac{1}{5}$ $\frac{5 + 2}{10} = \frac{7}{10}$	14. $\frac{2}{3} + \frac{3}{5}$ $\frac{10 + 9}{15} = \frac{19}{15}$
5. $\frac{1}{2} + \frac{2}{3}$ $\frac{3 + 4}{6} = \frac{7}{6}$	10. $\frac{2}{3} + \frac{2}{5}$ $\frac{10 + 6}{15} = \frac{16}{15}$	15. $\frac{1}{2} + \frac{5}{9}$ $\frac{9 + 10}{18} = \frac{19}{18}$

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<p>16.</p> $\frac{7}{10} + \frac{3}{5} \times \frac{2}{2}$ $\frac{7}{10} + \frac{6}{10} = \frac{13}{10}$	<p>21.</p> $\frac{1}{2} \times \frac{4}{4} + \frac{5}{8}$ $\frac{4}{8} + \frac{5}{8} = \frac{9}{8}$	<p>26.</p> $\frac{7}{10} + \frac{1}{2} \times \frac{5}{5}$ $\frac{7}{10} + \frac{5}{10} = \frac{12}{10} = \frac{6}{5}$
<p>17.</p> $\frac{1}{2} \times \frac{4}{4} + \frac{1}{8}$ $\frac{4}{8} + \frac{1}{8} = \frac{5}{8}$	<p>22.</p> $\frac{1}{3} \times \frac{3}{3} + \frac{4}{9}$ $\frac{3}{9} + \frac{4}{9} = \frac{7}{9}$	<p>27.</p> $\frac{1}{3} \times \frac{3}{3} + \frac{1}{9}$ $\frac{3}{9} + \frac{1}{9} = \frac{4}{9}$
<p>18.</p> $\frac{5}{9} + \frac{1}{3} \times \frac{3}{3}$ $\frac{5}{9} + \frac{3}{9} = \frac{8}{9}$	<p>23.</p> $\frac{2}{5} \times \frac{2}{2} + \frac{1}{10}$ $\frac{4}{10} + \frac{1}{10} = \frac{5}{10} = \frac{1}{2}$	<p>28.</p> $\frac{1}{5} \times \frac{2}{2} + \frac{3}{10}$ $\frac{2}{10} + \frac{3}{10} = \frac{5}{10} = \frac{1}{2}$
<p>19.</p> $\frac{1}{6} + \frac{2}{3} \times \frac{2}{2}$ $\frac{1}{6} + \frac{4}{6} = \frac{5}{6}$	<p>24.</p> $\frac{1}{2} \times \frac{5}{5} + \frac{3}{10}$ $\frac{5}{10} + \frac{3}{10} = \frac{8}{10} = \frac{4}{5}$	<p>29.</p> $\frac{7}{9} + \frac{1}{3} \times \frac{3}{3}$ $\frac{7}{9} + \frac{3}{9} = \frac{10}{9}$
<p>20.</p> $\frac{3}{4} + \frac{3}{8}$ $\frac{6}{8} + \frac{3}{8} = \frac{9}{8}$	<p>25.</p> $\frac{1}{5} \times \frac{2}{2} + \frac{1}{10}$ $\frac{2}{10} + \frac{1}{10} = \frac{3}{10}$	<p>30.</p> $\frac{7}{10} + \frac{2}{5} \times \frac{2}{2}$ $\frac{7}{10} + \frac{4}{10} = \frac{11}{10}$

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31. $\frac{2}{3} + \frac{5}{6}$ $\frac{4}{6} + \frac{5}{6} = \frac{9}{6} = \frac{3}{2}$	36. $\frac{1}{4} + \frac{1}{8}$ $\frac{2}{8} + \frac{1}{8} = \frac{3}{8}$	41. $\frac{2}{3} + \frac{4}{9}$ $\frac{6}{9} + \frac{4}{9} = \frac{10}{9}$
32. $\frac{2}{9} + \frac{2}{3}$ $\frac{2}{9} + \frac{6}{9} = \frac{8}{9}$	37. $\frac{1}{6} + \frac{1}{12}$ $\frac{2}{12} + \frac{1}{12} = \frac{3}{12} = \frac{1}{4}$	42. $\frac{1}{4} + \frac{3}{8}$ $\frac{2}{8} + \frac{3}{8} = \frac{5}{8}$
33. $\frac{1}{5} + \frac{7}{10}$ $\frac{2}{10} + \frac{7}{10} = \frac{9}{10}$	38. $\frac{3}{4} + \frac{7}{8}$ $\frac{6}{8} + \frac{7}{8} = \frac{13}{8}$	43. $\frac{3}{4} + \frac{5}{8}$ $\frac{6}{8} + \frac{5}{8} = \frac{11}{8}$
34. $\frac{4}{5} + \frac{1}{10}$ $\frac{8}{10} + \frac{1}{10} = \frac{9}{10}$	39. $\frac{1}{6} + \frac{7}{12}$ $\frac{2}{12} + \frac{7}{12} = \frac{9}{12} = \frac{3}{4}$	44. $\frac{9}{10} + \frac{3}{5}$ $\frac{9}{10} + \frac{6}{10} = \frac{15}{10} = \frac{3}{2}$
35. $\frac{2}{5} + \frac{9}{10}$ $\frac{4}{10} + \frac{9}{10} = \frac{13}{10}$	40. $\frac{2}{3} + \frac{7}{9}$ $\frac{6}{9} + \frac{7}{9} = \frac{13}{9}$	45. $\frac{1}{5} + \frac{9}{10}$ $\frac{2}{10} + \frac{9}{10} = \frac{11}{10}$