

# Mathematik \* Jahrgangsstufe 6 \* Addition und Subtraktion gemischter Zahlen

Beispiel zur Addition:

$$2\frac{3}{5} + 4\frac{7}{10} = 2\frac{6}{10} + 4\frac{7}{10} = 2+4+\frac{6}{10}+\frac{7}{10} = 6+\frac{13}{10} = 6+1\frac{3}{10} = 7\frac{3}{10}$$



Beispiele zur Subtraktion:

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

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

$$5\frac{2}{3} - 2\frac{5}{6} = 5\frac{4}{6} - 2\frac{5}{6} = 4\frac{10}{6} - 2\frac{5}{6} = 4-2 + \frac{10}{6}-\frac{5}{6} = 2+\frac{5}{6} = 2\frac{5}{6}$$

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

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

Beachte:  $2\frac{5}{6} - 3\frac{1}{6} = -1 + \frac{4}{6} \neq -1\frac{4}{6}$  denn  $-1\frac{4}{6} = -(1+\frac{4}{6}) = -1-\frac{4}{6}$

$$2\frac{5}{6} - 3\frac{1}{6} = 2+\frac{5}{6} - 3-\frac{1}{6} = 2-3 + \frac{5}{6}-\frac{1}{6} = -1+\frac{4}{6} = -\frac{6}{6}+\frac{4}{6} = -\frac{2}{6} = -\frac{1}{3} \text{ oder}$$

$$2\frac{5}{6} - 3\frac{1}{6} = -(3\frac{1}{6} - 2\frac{5}{6}) = -(2\frac{7}{6} - 2\frac{5}{6}) = -\frac{2}{6} = -\frac{1}{3}$$

1. Berechne möglichst geschickt!

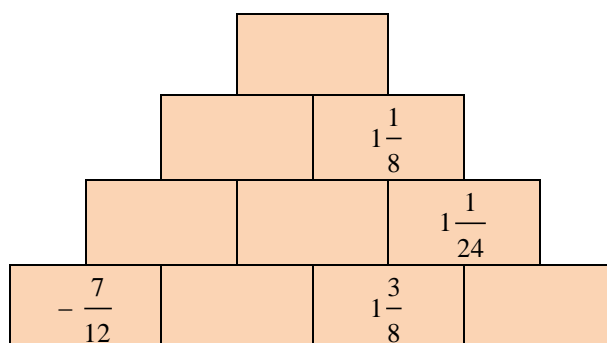
a)  $2\frac{3}{4} + 3\frac{3}{8}$       b)  $2\frac{3}{4} - 3\frac{3}{8}$       c)  $2\frac{3}{4} + 3\frac{7}{8}$       d)  $2\frac{3}{4} - 3\frac{7}{8}$

2. Berechne möglichst geschickt!

a)  $3\frac{5}{6} - 4\frac{5}{9} + 2\frac{7}{18} - 5\frac{1}{3}$       b)  $1\frac{3}{4} - (2\frac{1}{3} - 3\frac{5}{6}) + 4\frac{2}{3} - 8\frac{5}{12}$

c)  $13\frac{1}{12} - 14\frac{5}{8} + \frac{5}{6} - 2\frac{3}{8} + 1\frac{1}{4}$       d)  $1 - (2\frac{1}{3} - (3\frac{3}{4} - 5\frac{1}{2}) + 6\frac{5}{6}) + \frac{11}{12}$

3. In jedem Kästchen steht die Summe der beiden darunter liegenden Zahlen.  
Ergänze alle fehlenden Zahlen!



Mathematik \* Jahrgangsstufe 6 \* Addition und Subtraktion gemischter Zahlen \* Lösungen

1. a)  $2\frac{3}{4} + 3\frac{3}{8} = 2\frac{6}{8} + 3\frac{3}{8} = 2 + 3 + \frac{6}{8} + \frac{3}{8} = 5 + \frac{9}{8} = 6\frac{1}{8}$   
 b)  $2\frac{3}{4} - 3\frac{3}{8} = 2\frac{6}{8} - 3\frac{3}{8} = 2 - 3 + \frac{6}{8} - \frac{3}{8} = -1 + \frac{3}{8} = -\frac{8}{8} + \frac{3}{8} = -\frac{5}{8}$   
 c)  $2\frac{3}{4} + 3\frac{7}{8} = 2\frac{6}{8} + 3\frac{7}{8} = 2 + 3 + \frac{6}{8} + \frac{7}{8} = 5 + \frac{13}{8} = 5 + 1 + \frac{5}{8} = 6\frac{5}{8}$   
 d)  $2\frac{3}{4} - 3\frac{7}{8} = -(3\frac{7}{8} - 2\frac{3}{4}) = -(3 - 2 + \frac{7}{8} - \frac{6}{8}) = -(1\frac{1}{8}) = -1\frac{1}{8}$



2. a)  $3\frac{5}{6} - 4\frac{5}{9} + 2\frac{7}{18} - 5\frac{1}{3} = 3\frac{15}{18} - 4\frac{10}{18} + 2\frac{7}{18} - 5\frac{6}{18} = (3\frac{15}{18} + 2\frac{7}{18}) - (4\frac{10}{18} + 5\frac{6}{18}) = 5\frac{22}{18} - 9\frac{16}{18} = 5 - 9 + \frac{22}{18} - \frac{16}{18} = -4 + \frac{6}{18} = -4 + \frac{1}{3} = -3 - \frac{2}{3} = -3\frac{2}{3}$   
 b)  $1\frac{3}{4} - (2\frac{1}{3} - 3\frac{5}{6}) + 4\frac{2}{3} - 8\frac{5}{12} = 1\frac{9}{12} - (2\frac{2}{6} - 3\frac{5}{6}) + 4\frac{8}{12} - 8\frac{5}{12} = 1\frac{9}{12} - (-1 - \frac{3}{6}) + 4\frac{8}{12} - 8\frac{5}{12} = 1\frac{9}{12} + 1\frac{3}{6} + 4\frac{8}{12} - 8\frac{5}{12} = 1\frac{9}{12} + 1\frac{6}{12} + 4\frac{8}{12} - 8\frac{5}{12} = 1 + 1 + 4 + \frac{9}{12} + \frac{6}{12} + \frac{8}{12} - 8\frac{5}{12} = 6 + \frac{23}{12} - 8 - \frac{5}{12} = -2 + \frac{18}{12} = -2 + 1\frac{1}{2} = -\frac{1}{2}$   
 c)  $13\frac{1}{12} - 14\frac{5}{8} + \frac{5}{6} - 2\frac{3}{8} + 1\frac{1}{4} = 13\frac{2}{24} + \frac{20}{24} + 1\frac{6}{24} - (14\frac{15}{24} + 2\frac{9}{24}) = 14\frac{28}{24} - 16\frac{24}{24} = 15\frac{4}{24} - 17 = -(17 - 15\frac{1}{6}) = -1\frac{5}{6}$   
 d)  $1 - (2\frac{1}{3} - (3\frac{3}{4} - 5\frac{1}{2}) + 6\frac{5}{6}) + \frac{11}{12} = 1 - (2\frac{4}{12} - (3\frac{3}{4} - 5\frac{2}{4}) + 6\frac{10}{12}) + \frac{11}{12} = 1 - (2\frac{4}{12} - (-2 + \frac{1}{4}) + 6\frac{10}{12}) + \frac{11}{12} = 1 - (2\frac{4}{12} - (-1\frac{3}{4}) + 6\frac{10}{12}) + \frac{11}{12} = 1 - (2\frac{4}{12} + 1\frac{9}{12} + 6\frac{10}{12}) + \frac{11}{12} = 1 - 9\frac{23}{12} + \frac{11}{12} = 1 - 9 - \frac{23}{12} + \frac{11}{12} = -8 - \frac{12}{12} = -8 - 1 = -9$

3. In jedem Kästchen steht die Summe der beiden darunter liegenden Zahlen.  
Ergänze alle fehlenden Zahlen!

