Brüche kürzen, erweitern und vergleichen 2

1) Kürze die folgenden Brüche soweit wie möglich:

a) $\frac{24}{56}$ = b) $\frac{3}{9}$ = c) $\frac{27}{81}$ = d) $\frac{15}{36}$ =

e) $\frac{10}{25}$ = f) $\frac{18}{54}$ = g) $\frac{115}{200}$ = h) $\frac{96}{120}$ =

i) $\frac{63}{81}$ = j) $\frac{120}{360}$ = k) $\frac{32}{56}$ = l) $\frac{14}{91}$ =

2) Erweitere, so dass die Brüche gleichnamig sind:

a) $\frac{6}{7}$, $\frac{3}{4}$ b) $\frac{3}{4} - \frac{1}{2}$ c) $\frac{7}{9}$, $\frac{5}{7}$ d) $\frac{3}{5}$, $\frac{10}{11}$

e) $\frac{1}{8}$, $\frac{3}{10}$ f) $\frac{5}{12}$, $\frac{7}{20}$ g) $\frac{2}{3}$, $\frac{1}{2}$ h) $\frac{2}{9}$, $\frac{4}{15}$

i) $\frac{5}{6}$, $\frac{7}{21}$ j) $\frac{3}{4}$, $\frac{9}{14}$ k) $\frac{17}{39}$, $\frac{4}{13}$ l) $\frac{5}{16}$, $\frac{7}{24}$

3) Ordne der Größe nach, die kleinste Zahl zuerst:

a) $6\frac{2}{3}$, $\frac{2}{3}$, $\frac{5}{6}$, $\frac{10}{18}$, $6\frac{1}{6}$, $\frac{7}{12}$, $6\frac{5}{18}$

b) $\frac{3}{4}$, $\frac{1}{6}$, $\frac{7}{15}$, $\frac{11}{12}$, $\frac{1}{2}$, $\frac{5}{6}$, $\frac{3}{5}$

c) $2\frac{1}{4}$, $3\frac{3}{10}$, $6\frac{11}{15}$, $2\frac{2}{7}$, $2\frac{3}{8}$, $6\frac{3}{5}$, $3\frac{4}{15}$

d) $\frac{5}{4}$, $1\frac{3}{8}$, $\frac{12}{6}$, $1\frac{3}{5}$, $2\frac{6}{7}$, $\frac{1}{2}$, $1\frac{3}{4}$

Lösungen:

1) Kürze die folgenden Brüche soweit wie möglich:

a) $\frac{24}{56} = \frac{3}{7}$ b) $\frac{3}{9} = \frac{1}{3}$ c) $\frac{27}{81} = \frac{1}{3}$ d) $\frac{15}{36} = \frac{5}{12}$

e) $\frac{10}{25} = \frac{2}{5}$ f) $\frac{18}{54} = \frac{1}{3}$ g) $\frac{115}{200} = \frac{23}{40}$ h) $\frac{96}{120} = \frac{4}{5}$

i) $\frac{63}{81} = \frac{7}{9}$ j) $\frac{120}{360} = \frac{1}{3}$ k) $\frac{32}{56} = \frac{4}{7}$ l) $\frac{14}{91} = \frac{2}{13}$

2) Erweitere, so dass die Brüche gleichnamig sind:

a) $\frac{6}{7}, \frac{3}{4}$ $\frac{24}{28}, \frac{21}{28}$ b) $\frac{3}{4}, \frac{1}{2}$ $\frac{3}{4}, \frac{2}{4}$ c) $\frac{7}{9}, \frac{5}{7}$ $\frac{49}{63}, \frac{45}{63}$ d) $\frac{3}{5}, \frac{10}{11}$ $\frac{33}{55}, \frac{50}{55}$

e) $\frac{1}{8}, \frac{3}{10}$ $\frac{5}{40}, \frac{12}{40}$ f) $\frac{5}{12}, \frac{7}{20}$ $\frac{25}{60}, \frac{21}{60}$ g) $\frac{2}{3}, \frac{1}{2}$ $\frac{4}{6}, \frac{3}{6}$ h) $\frac{2}{9}, \frac{4}{15}$ $\frac{10}{45}, \frac{12}{45}$

i) $\frac{5}{6}, \frac{7}{21}$ $\frac{35}{42}, \frac{14}{42}$ j) $\frac{3}{4}, \frac{9}{14}$ $\frac{21}{28}, \frac{18}{28}$ k) $\frac{17}{39}, \frac{4}{13}$ $\frac{17}{39}, \frac{12}{39}$ l) $\frac{5}{16}, \frac{7}{24}$ $\frac{15}{48}, \frac{14}{48}$

3) Ordne der Größe nach, die kleinste Zahl zuerst:

a) $6\frac{2}{3} = 6\frac{12}{18}$, $\frac{2}{3} = \frac{24}{36}$, $\frac{5}{6} = \frac{30}{36}$, $\frac{10}{18} = \frac{20}{36}$, $6\frac{1}{6} = 6\frac{3}{18}$, $\frac{7}{12} = \frac{21}{36}$, $6\frac{5}{18}$

$\frac{20}{36} < \frac{21}{36} < \frac{24}{36} < \frac{30}{36} < 6\frac{3}{18} < 6\frac{5}{18} < 6\frac{12}{18}$

$\frac{10}{18} < \frac{7}{12} < \frac{2}{3} < \frac{5}{6} < 6\frac{1}{6} < 6\frac{5}{18} < 6\frac{2}{3}$

b) $\frac{3}{4} = \frac{45}{60}$, $\frac{1}{6} = \frac{10}{60}$, $\frac{7}{15} = \frac{28}{60}$, $\frac{11}{12} = \frac{55}{60}$, $\frac{1}{2} = \frac{30}{60}$, $\frac{5}{6} = \frac{50}{60}$, $\frac{3}{5} = \frac{36}{60}$

$$\frac{10}{60} < \frac{28}{60} < \frac{30}{60} < \frac{36}{60} < \frac{45}{60} < \frac{50}{60} < \frac{55}{60}$$

$$\frac{1}{6} < \frac{7}{15} < \frac{1}{2} < \frac{3}{5} < \frac{3}{4} < \frac{5}{6} < \frac{11}{12}$$

c) $2\frac{1}{4} = 2\frac{14}{56}$, $3\frac{3}{10} = 3\frac{9}{30}$, $6\frac{11}{15}$, $2\frac{2}{7} = 2\frac{16}{56}$, $2\frac{3}{8} = 2\frac{21}{56}$, $6\frac{3}{5} = 6\frac{9}{15}$,

$$3\frac{4}{15} = 3\frac{8}{30}$$

$$2\frac{14}{56} < 2\frac{16}{56} < 2\frac{21}{56} < 3\frac{8}{30} < 3\frac{9}{30} < 6\frac{9}{15} < 6\frac{11}{15}$$

$$2\frac{1}{4} < 2\frac{2}{7} < 2\frac{3}{8} < 3\frac{4}{15} < 3\frac{3}{10} < 6\frac{3}{5} < 6\frac{11}{15}$$

d) $\frac{5}{4} = 1\frac{1}{4}$, $1\frac{3}{8}$, $\frac{12}{6} = 2$, $1\frac{3}{5}$, $2\frac{6}{7}$, $\frac{1}{2}$, $1\frac{3}{4}$

$$\frac{5}{4} = 1\frac{1}{4} = 1\frac{10}{40} \text{ , } 1\frac{3}{8} = 1\frac{15}{40} \text{ , } \frac{12}{6} = 2, \; 1\frac{3}{5} = 1\frac{24}{40} \text{ , } 2\frac{6}{7} \text{ , } \frac{1}{2} \text{ , } 1\frac{3}{4} = 1\frac{30}{40}$$

$$\frac{1}{2} < 1\frac{10}{40} < 1\frac{15}{40} < 1\frac{24}{40} < 1\frac{30}{40} < 2 < 2\frac{6}{7}$$

$$\frac{1}{2} < \frac{5}{4} < 1\frac{3}{8} < 1\frac{3}{5} < 1\frac{3}{4} < \frac{12}{6} < 2\frac{6}{7}$$