Brüche kürzen, erweitern und vergleichen 3

1) Kürze die folgenden Brüche soweit wie möglich:

a) $\frac{48}{60}$ = b) $\frac{27}{54}$ = c) $\frac{6}{45}$ = d) $\frac{18}{48}$ =

e) $\frac{25}{100}$ = f) $\frac{16}{20}$ = g) $\frac{36}{84}$ = h) $\frac{56}{72}$ =

i) $\frac{8}{36}$ = j) $\frac{12}{28}$ = k) $\frac{90}{252}$ = l) $\frac{42}{78}$ =

2) Erweitere, so dass die Brüche gleichnamig sind:

a) $\frac{2}{3}$, $\frac{5}{8}$ b) $\frac{7}{18}$, $\frac{5}{12}$ c) $\frac{3}{10}$, $\frac{8}{15}$ d) $\frac{13}{20}$, $\frac{4}{25}$

e) $\frac{11}{14}$, $\frac{20}{21}$ f) $\frac{3}{4}$, $\frac{1}{3}$ g) $\frac{9}{16}$, $\frac{7}{20}$ h) $\frac{1}{2}$, $\frac{5}{12}$

i) $\frac{1}{2}$, $\frac{2}{15}$ j) $\frac{5}{28}$, $\frac{3}{16}$ k) $\frac{11}{44}$, $\frac{5}{22}$ l) $\frac{5}{24}$, $\frac{11}{36}$

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

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

b) $\frac{3}{12}$, $\frac{1}{6}$, $\frac{5}{9}$, $\frac{3}{4}$, $\frac{2}{3}$, $\frac{1}{2}$

c) $1\frac{5}{6}$, $2\frac{1}{3}$, $2\frac{4}{5}$, $1\frac{5}{12}$, $1\frac{5}{8}$, $2\frac{7}{15}$, $1\frac{3}{4}$

d) $\frac{5}{9}$, $1\frac{3}{8}$, $\frac{7}{8}$, $1\frac{4}{7}$, $1\frac{3}{4}$, $\frac{2}{3}$, $\frac{5}{6}$

Lösungen:

1) Kürze die folgenden Brüche soweit wie möglich:

a) $\frac{48}{60} = \frac{4}{5}$ b) $\frac{27}{54} = \frac{1}{2}$ c) $\frac{6}{45} = \frac{2}{15}$ d) $\frac{18}{48} = \frac{3}{8}$

e) $\frac{25}{100} = \frac{1}{4}$ f) $\frac{16}{20} = \frac{4}{5}$ g) $\frac{36}{84} = \frac{3}{7}$ h) $\frac{56}{72} = \frac{7}{9}$

i) $\frac{8}{36} = \frac{2}{9}$ j) $\frac{12}{28} = \frac{3}{7}$ k) $\frac{90}{252} = \frac{5}{14}$ l) $\frac{42}{78} = \frac{7}{13}$

2) Erweitere, so dass die Brüche gleichnamig sind:

a) $\frac{2}{3}, \frac{5}{8}$ $\frac{16}{24}, \frac{15}{24}$ b) $\frac{7}{18}, \frac{5}{12}$ $\frac{14}{36}, \frac{15}{36}$ c) $\frac{3}{10}, \frac{8}{15}$ $\frac{9}{30}, \frac{16}{30}$

d) $\frac{13}{20}, \frac{4}{25}$ $\frac{65}{100}, \frac{16}{100}$ e) $\frac{11}{14}, \frac{20}{21}$ $\frac{33}{42}, \frac{40}{42}$ f) $\frac{3}{4}, \frac{1}{3}$ $\frac{9}{12}, \frac{4}{12}$

g) $\frac{9}{16}, \frac{7}{20}$ $\frac{45}{80}, \frac{28}{80}$ h) $\frac{1}{2}, \frac{5}{12}$ $\frac{6}{12}, \frac{5}{12}$ i) $\frac{1}{2}, \frac{2}{15}$ $\frac{15}{30}, \frac{4}{30}$

j) $\frac{5}{28}, \frac{3}{16}$ $\frac{20}{112}, \frac{21}{112}$ k) $\frac{11}{44}, \frac{5}{22}$ $\frac{11}{44}, \frac{10}{44}$ l) $\frac{5}{24}, \frac{11}{36}$ $\frac{15}{72}, \frac{22}{72}$

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

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

$4\frac{12}{30}, \frac{36}{120}, 4\frac{9}{30}, \frac{40}{120}, 4\frac{14}{30}, \frac{45}{120}, \frac{20}{120}$

$\frac{20}{120} < \frac{36}{120} < \frac{40}{120} < \frac{45}{120} < 4\frac{9}{30} < 4\frac{12}{30} < 4\frac{14}{30}$

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

b) $\frac{3}{12}$, $\frac{1}{6}$, $\frac{5}{9}$, $\frac{3}{4}$, $\frac{2}{3}$, $\frac{1}{2}$

$\frac{9}{36}$, $\frac{6}{36}$, $\frac{20}{36}$, $\frac{27}{36}$, $\frac{24}{36}$, $\frac{18}{36}$

$\frac{6}{36} < \frac{9}{36} < \frac{18}{36} < \frac{20}{36} < \frac{24}{36} < \frac{27}{36}$

$\frac{1}{6} < \frac{3}{12} < \frac{1}{2} < \frac{5}{9} < \frac{2}{3} < \frac{3}{4}$

c) $1\frac{5}{6}$, $2\frac{1}{3}$, $2\frac{4}{5}$, $1\frac{5}{12}$, $1\frac{5}{8}$, $2\frac{7}{15}$, $1\frac{3}{4}$

$1\frac{20}{24}$, $2\frac{5}{15}$, $2\frac{12}{15}$, $1\frac{10}{24}$, $1\frac{15}{24}$, $2\frac{7}{15}$, $1\frac{18}{24}$

$1\frac{10}{24} < 1\frac{15}{24} < 1\frac{18}{24} < 1\frac{20}{24} < 2\frac{5}{15} < 2\frac{7}{15} < 2\frac{12}{15}$

$1\frac{5}{12} < 1\frac{5}{8} < 1\frac{3}{4} < 1\frac{5}{6} < 2\frac{1}{3} < 2\frac{7}{15} < 2\frac{4}{5}$

d) $\frac{5}{9}$, $1\frac{3}{8}$, $\frac{7}{8}$, $1\frac{4}{7}$, $1\frac{3}{4}$, $\frac{2}{3}$, $\frac{5}{6}$

$\frac{40}{72}$, $1\frac{21}{56}$, $\frac{63}{72}$, $1\frac{32}{56}$, $1\frac{42}{56}$, $\frac{48}{72}$, $\frac{60}{72}$

$\frac{40}{72} < \frac{48}{72} < \frac{60}{72} < \frac{63}{72} < 1\frac{21}{56} < 1\frac{32}{56} < 1\frac{42}{56}$

$\frac{5}{9} < \frac{2}{3} < \frac{5}{6} < \frac{7}{8} < 1\frac{3}{8} < 1\frac{4}{7} < 1\frac{3}{4}$