Pracovní list č.5 (řešení)

a) $$\frac{2\frac{4}{9}-\frac{8}{15}}{2\frac{7}{9}-\frac{1}{10}}=\frac{\frac{22}{9}-\frac{8}{15}}{\frac{25}{9}-\frac{1}{10}}=\frac{\frac{+110-24}{45}}{\frac{+250-9}{90}}=\frac{+\frac{86}{45}}{+\frac{241}{90}}=+\frac{86\,.\,90}{241\,.\,45}=+\frac{172}{241}$$

b) $$\left(-\frac{1}{3}+\frac{1}{2}\right)\cdot\left(-1\frac{6}{7}-1\frac{1}{3}\right)=\left(-\frac{1}{3}+\frac{1}{2}\right)\cdot\left(-\frac{13}{7}-\frac{4}{3}\right)=\left(\frac{-2+3}{6}\right)\cdot\left(\frac{-39-28}{21}\right)=$$
$$=\left(+\frac{1}{6}\right)\cdot\left(-\frac{67}{21}\right)=-\frac{1\,.\,67}{6\,.\,21}=-\frac{67}{126}$$

c) $$\left(3\frac{1}{2}-3\frac{3}{5}\right)-\left(-1\frac{5}{6}-1\frac{3}{11}\right)=\left(\frac{7}{2}-\frac{18}{5}\right)-\left(-\frac{11}{6}-\frac{14}{11}\right)=\left(\frac{+35-36}{10}\right)-\left(\frac{-121-84}{66}\right)=$$
$$=\left(-\frac{1}{10}\right)-\left(-\frac{205}{66}\right)=\frac{-33+1025}{330}=-\frac{496}{165}=-3\frac{1}{165}$$

d) $$\frac{2\frac{6}{11}+\frac{2}{7}}{4\frac{5}{7}-2\frac{1}{5}}=\frac{\frac{28}{11}+\frac{2}{7}}{\frac{33}{7}-\frac{11}{5}}=\frac{\frac{+196+22}{77}}{\frac{+165-77}{35}}=\frac{+\frac{218}{77}}{+\frac{88}{35}}=+\frac{218\,.\,35}{88\,.\,77}=+\frac{545}{484}=+1\frac{61}{484}$$

e) $$\left(3\frac{1}{2}+\frac{12}{13}\right)\cdot\left(\frac{4}{5}-\frac{4}{11}\right)=\left(\frac{7}{2}+\frac{12}{13}\right)\cdot\left(\frac{4}{5}-\frac{4}{11}\right)=\left(\frac{+91+24}{26}\right)\cdot\left(\frac{+44-20}{55}\right)=$$
$$=\left(+\frac{115}{26}\right)\cdot\left(+\frac{24}{55}\right)=+\frac{115\,.\,24}{26\,.\,55}=+\frac{276}{143}=+2\frac{133}{143}$$

f) $$\left(\frac{1}{3}-3\frac{1}{5}\right)-\left(1\frac{6}{7}-4\frac{2}{5}\right)=\left(\frac{1}{3}-\frac{16}{5}\right)-\left(\frac{13}{7}-\frac{22}{5}\right)=\left(\frac{+5-48}{15}\right)-\left(\frac{+65-154}{35}\right)=$$
$$=\left(-\frac{43}{15}\right)-\left(-\frac{89}{35}\right)=\frac{-301+267}{105}=-\frac{34}{105}$$

g) $$\frac{3\frac{1}{6}-2\frac{14}{15}}{1\frac{7}{15}+1\frac{1}{11}}=\frac{\frac{19}{6}-\frac{44}{15}}{\frac{22}{15}+\frac{12}{11}}=\frac{\frac{+95-88}{30}}{\frac{+242+180}{165}}=\frac{+\frac{7}{30}}{+\frac{422}{165}}=+\frac{7\,.\,165}{422\,.\,30}=+\frac{77}{844}$$

h) $$\left(-3\frac{1}{6}-2\frac{11}{15}\right)\cdot\left(-3\frac{7}{8}+2\frac{5}{7}\right)=\left(-\frac{19}{6}-\frac{41}{15}\right)\cdot\left(-\frac{31}{8}+\frac{19}{7}\right)=\left(\frac{-95-82}{30}\right)\cdot\left(\frac{-217+152}{56}\right)=$$
$$=\left(-\frac{177}{30}\right)\cdot\left(-\frac{65}{56}\right)=+\frac{177\,.\,65}{30\,.\,56}=+\frac{767}{112}=+7\frac{95}{112}$$

i) $$\left(4\frac{5}{6}-1\frac{4}{7}\right)-\left(2\frac{2}{3}-2\frac{3}{7}\right)=\left(\frac{29}{6}-\frac{11}{7}\right)-\left(\frac{8}{3}-\frac{17}{7}\right)=\left(\frac{+203-66}{42}\right)-\left(\frac{+56-51}{21}\right)=$$
$$=\left(+\frac{137}{42}\right)-\left(+\frac{5}{21}\right)=\frac{137-10}{42}=\frac{127}{42}=3\frac{1}{42}$$

j) $$\frac{1\frac{1}{8}-\frac{1}{5}}{\frac{1}{7}+2\frac{3}{4}}=\frac{\frac{9}{8}-\frac{1}{5}}{\frac{1}{7}+\frac{11}{4}}=\frac{\frac{+45-8}{40}}{\frac{+4+77}{28}}=\frac{+\frac{37}{40}}{+\frac{81}{28}}=+\frac{37\,.\,28}{81\,.\,40}=+\frac{259}{810}$$