Correction 1

a. $\frac{2}{7}+\frac{3}{11}=\frac{22}{77}+\frac{21}{77}=\frac{22+21}{77}=\frac{43}{77}$

b. $\frac{5}{8}+2=\frac{5}{8}+\frac{16}{8}=\frac{5+16}{8}=\frac{21}{8}$

c. $\frac{16}{3}-\frac{24}{6}=\frac{32}{6}-\frac{24}{6}=\frac{32-24}{6}=\frac{8}{6}=\frac{4\times\cancel{2}}{3\times\cancel{2}}=\frac{4}{3}$

d. $\frac{-2}{4}+\frac{5}{6}=\frac{-6}{12}+\frac{10}{12}=\frac{-6+10}{12}=\frac{4}{12}=\frac{\cancel{4}}{\cancel{4}\times 3}=\frac{1}{3}$

e. $-\frac{3}{11}+\frac{-4}{5}=-\frac{15}{55}+\frac{-44}{55}=\frac{-15}{55}+\frac{-44}{55}=\frac{-59}{55}=-\frac{59}{55}$

f. $\frac{2}{4}+\frac{2}{-4}=\frac{2}{4}+\frac{-2}{4}=\frac{2-2}{4}=0$

g. $\frac{6}{8}-\frac{-2}{6}=\frac{18}{24}-\frac{-8}{24}=\frac{18-(-8)}{24}=\frac{18+8}{24}$
$=\frac{26}{24}=\frac{13\times\cancel{2}}{12\times\cancel{2}}=\frac{13}{12}$

h. $-\frac{5}{12}-\frac{-2}{3}=\frac{-5}{12}+\frac{2}{3}=\frac{-5}{12}+\frac{8}{12}=\frac{-5+8}{12}$
$=\frac{3}{12}=\frac{\cancel{3}}{\cancel{3}\times 4}=\frac{1}{4}$

i. $2+\frac{-3}{2}=\frac{4}{2}+\frac{-3}{2}=\frac{4-3}{2}=\frac{1}{2}$

Correction 2

a. $-\frac{1}{6}+\frac{1}{-4}=\frac{-1}{6}+\frac{-1}{4}=\frac{-2}{12}+\frac{-3}{12}=\frac{-2-3}{12}$
$=\frac{-5}{12}=-\frac{5}{12}$

b. $\frac{5}{14}-\frac{3}{4}=\frac{10}{28}-\frac{21}{28}=\frac{10-21}{28}=\frac{-11}{28}=-\frac{11}{28}$

c. $\frac{-3}{15}-\frac{-4}{25}=\frac{-\cancel{3}}{5\times\cancel{3}}-\frac{-4}{25}=\frac{-1}{5}+\frac{4}{25}=\frac{-15}{75}+\frac{12}{75}$
$=\frac{-15+12}{75}=\frac{-3}{75}=-\frac{\cancel{3}}{\cancel{3}\times 25}=-\frac{1}{25}$

d. $-\frac{1}{3}+\frac{5}{2}-\frac{5}{4}=\frac{-4}{12}+\frac{30}{12}-\frac{15}{12}=\frac{-4+30-15}{12}=\frac{11}{12}$

Correction 3

a. $\frac{5}{-3}\times\frac{-4}{7}$ est positif ;

b. $\frac{12}{-5}\times\frac{-4}{-3}$ est négatif ;

c. $-\frac{5}{-14}\times\frac{-4}{15}$ est négatif ;

d. $-\frac{11}{-5}\times\frac{-10}{11}$ est négatif ;

e. $\frac{7}{-6}\times\left(-\frac{36}{-17}\right)$ est négatif ;

f. $-\left(-\frac{9}{-7}\right)\times\left(-\frac{25}{27}\right)$ est positif.

Correction 4

a. $\frac{3\times 2\times 5}{2\times 5\times 7}=\frac{3\times\cancel{2}\times\cancel{5}}{\cancel{2}\times\cancel{5}\times 7}=\frac{3}{7}$

b. $\frac{5\times 12\times 7}{7\times 12\times 3}=\frac{5\times\cancel{12}\times\cancel{7}}{\cancel{7}\times\cancel{12}\times 3}=\frac{5}{3}$

c. $\frac{3\times 4}{4\times 5\times 3}=\frac{\cancel{3}\times\cancel{4}}{\cancel{4}\times 5\times\cancel{3}}=\frac{1}{5}$

d. $\frac{12\times 5}{4\times 7}=\frac{3\times 4\times 5}{4\times 7}=\frac{3\times\cancel{4}\times 5}{\cancel{4}\times 7}=\frac{15}{7}$

e. $\frac{15\times 11}{3\times 4}=\frac{3\times 5\times 11}{3\times 4}=\frac{\cancel{3}\times 5\times 11}{\cancel{3}\times 4}=\frac{55}{4}$

f. $\frac{7\times 3}{12\times 5}=\frac{7\times 3}{3\times 4\times 5}=\frac{7\times\cancel{3}}{\cancel{3}\times 4\times 5}=\frac{7}{20}$

Correction 5

a. $\frac{9}{7}\times\frac{14}{15}=\frac{9}{\cancel{7}}\times\frac{\cancel{7}\times 2}{15}=\frac{3\times\cancel{3}}{1}\times\frac{2}{\cancel{3}\times 5}=\frac{3}{1}\times\frac{2}{5}=\frac{6}{5}$

b. $\frac{7}{8}\times\frac{3}{14}\times\frac{4}{9}=\frac{\cancel{7}}{\cancel{4}\times 2}\times\frac{\cancel{3}}{\cancel{7}\times 2}\times\frac{\cancel{4}}{3\times\cancel{3}}=\frac{1}{2\times 2\times 3}=\frac{1}{12}$

c. $\frac{17}{81}\times\frac{9}{8}\times\frac{7}{34}\times\frac{64}{70}=\frac{\cancel{17}}{\cancel{9}\times 9}\times\frac{\cancel{9}}{8}\times\frac{\cancel{7}}{\cancel{17}\times 2}\times\frac{\cancel{8}\times 8}{\cancel{7}\times 10}$
$=\frac{8}{9\times 2\times 10}=\frac{2\times\cancel{2}\times\cancel{2}}{9\times\cancel{2}\times\cancel{2}\times 5}=\frac{2}{45}$

Correction 6

a. $\frac{5\times 21}{14\times 20}=\frac{\cancel{5}\times\cancel{7}\times 3}{\cancel{7}\times 2\times\cancel{5}\times 4}=\frac{3}{2\times 4}=\frac{3}{8}$

b. $\frac{15\times 12}{9\times 25}=\frac{\cancel{5}\times\cancel{3}\times 4\times\cancel{3}}{\cancel{3}\times\cancel{3}\times\cancel{5}\times\cancel{5}}=\frac{4}{5}$

c. $\frac{24\times 28}{18\times 7}=\frac{\cancel{6}\times 4\times\cancel{7}\times 4}{\cancel{6}\times 3\times\cancel{7}}=\frac{16}{3}$

d. $\frac{99\times 25}{22\times 125}=\frac{\cancel{11}\times 9\times\cancel{25}}{\cancel{11}\times 2\times\cancel{25}\times 5}=\frac{9}{2\times 5}=\frac{9}{10}$

e. $\frac{9\times 12\times\cancel{10}}{27\times\cancel{10}\times 6}=\frac{9\times 6\times 2\times 1}{9\times 3\times 1\times 6}=\frac{\cancel{9}\times\cancel{6}\times 2}{\cancel{9}\times 3\times\cancel{6}}=\frac{2}{3}$

f. $\frac{3\times 6\times 8}{16\times 12\times 18}=\frac{\cancel{18}\times\cancel{8}}{\cancel{8}\times 2\times 12\times\cancel{18}}=\frac{1}{24}$

Correction 7

a. $1+\frac{1}{-2}\times\frac{1}{2}=1+\frac{1}{-4}=1-\frac{1}{4}=\frac{4}{4}-\frac{1}{4}=\frac{3}{4}$

b. $\frac{5}{9}\times\frac{27}{4}+\frac{5}{6}=\frac{5\times\cancel{9}\times 3}{\cancel{9}\times 4}+\frac{5}{6}=\frac{5\times 3}{1\times 4}+\frac{5}{6}=\frac{15}{4}+\frac{5}{6}$
$=\frac{45}{12}+\frac{10}{12}=\frac{45+10}{12}=\frac{55}{12}$

c. $\frac{3}{7}+\frac{8}{4}\times\left(-\frac{1}{2}\right)=\frac{3}{7}-\frac{8}{8}=\frac{3}{7}-1=\frac{3}{7}-\frac{7}{7}=\frac{3-7}{7}$
$=\frac{-4}{7}=-\frac{4}{7}$

d. $\frac{-7}{15}\times\frac{-5}{21}-\frac{-4}{3}=\frac{7}{15}\times\frac{5}{21}+\frac{4}{3}=\frac{\cancel{7}\times\cancel{5}}{\cancel{5}\times 3\times\cancel{7}\times 3}+\frac{4}{3}$
$=\frac{1\times 1}{1\times 3\times 1\times 1}+\frac{4}{3}=\frac{1}{9}+\frac{4}{3}=\frac{1}{9}+\frac{12}{9}=\frac{13}{9}$

e. $-3+\frac{9}{5}\times 3=\frac{-15}{5}+\frac{27}{5}=\frac{-15+27}{5}=\frac{12}{5}$

f. $\left(\frac{3}{15}-\frac{3}{20}\right)\times\frac{5}{9}=\left(\frac{1}{5}-\frac{3}{20}\right)\times\frac{5}{9}=\left(\frac{4}{20}-\frac{3}{20}\right)\times\frac{5}{9}$
$=\frac{1}{20}\times\frac{5}{9}=\frac{1\times\cancel{5}}{\cancel{5}\times 4\times 9}=\frac{1\times 1}{1\times 4\times 9}=\frac{1}{36}$

Correction 8

a. $\dfrac{8}{3}\div\dfrac{12}{3}=\dfrac{\cancel{4}\times 2}{\cancel{3}}\times\dfrac{\cancel{3}}{\cancel{4}\times 3}=\dfrac{2\times 1}{1\times 3}=\dfrac{2}{3}$

b. $\dfrac{18}{3}\div 9=\dfrac{\cancel{9}\times 2}{3}\times\dfrac{1}{\cancel{9}}=\dfrac{2}{3}$

c. $\dfrac{3}{\frac{4}{6}}=3\times\dfrac{3\times\cancel{2}}{2\times\cancel{2}}=3\times\dfrac{3}{2}=\dfrac{9}{2}$

d. $\dfrac{\frac{4}{12}}{\frac{20}{3}}=\dfrac{4}{12}\times\dfrac{3}{20}=\dfrac{\cancel{4}}{\cancel{4}\times 3}\times\dfrac{\cancel{3}}{5\times\cancel{4}}=\dfrac{1\times 1}{4\times 5}=\dfrac{1}{20}$

e. $\dfrac{\frac{14}{26}}{\frac{28}{39}}=\dfrac{14}{26}\times\dfrac{39}{28}=\dfrac{\cancel{14}}{\cancel{13}\times 2}\times\dfrac{\cancel{13}\times 3}{\cancel{14}\times 2}=\dfrac{1}{2}\times\dfrac{3}{2}=\dfrac{3}{4}$

f. $\dfrac{\frac{25}{16}}{15}=\dfrac{25}{16}\times\dfrac{1}{15}=\dfrac{\cancel{5}\times 5}{16}\times\dfrac{1}{\cancel{5}\times 3}=\dfrac{5}{16}\times\dfrac{1}{3}=\dfrac{5}{48}$

Correction 9

1.
- Le calcul **A** donne pour résultat $\dfrac{1}{3}$.
- Le calcul **B** donne pour résultat $\dfrac{5}{12}$.

2. Voici les deux expressions symbolisant ces deux calculs :
- Pour le calcul A : $\dfrac{\frac{4}{5}-\frac{2}{3}}{\frac{2}{5}}$
- Pour le calcul B : $\left(\dfrac{\frac{1}{3}}{\frac{2}{7}}-1\right)\times\dfrac{5}{2}$

Correction 10

a. $-3\times\dfrac{\frac{5}{4}}{\frac{15}{6}}+\dfrac{5}{\frac{1}{2}}=-3\times\dfrac{5}{4}\times\dfrac{6}{15}+5\times\dfrac{2}{1}-3\times\dfrac{\overset{1}{\cancel{5}}}{\underset{2}{\cancel{4}}}\times\dfrac{\overset{3}{\cancel{6}}}{\underset{3}{\cancel{15}}}+10$

$=-3\times\dfrac{1}{2}\times\dfrac{3}{3}+10=\dfrac{-3}{2}+10=\dfrac{-3}{2}+\dfrac{20}{2}$

$=\dfrac{-3+20}{2}=\dfrac{17}{2}$

b. $\dfrac{3+\frac{2}{5}}{3-\frac{4}{10}}=\dfrac{\frac{15}{5}+\frac{2}{5}}{\frac{30}{10}-\frac{4}{10}}=\dfrac{\frac{15+2}{5}}{\frac{30-4}{10}}=\dfrac{\frac{17}{5}}{\frac{26}{10}}=\dfrac{17}{5}\times\dfrac{10}{26}$

$=\dfrac{17}{\cancel{5}}\times\dfrac{\cancel{5}\times 2}{26}=\dfrac{17}{1}\times\dfrac{2}{26}=\dfrac{17}{1}\times\dfrac{\cancel{2}}{\cancel{2}\times 13}=\dfrac{17}{1}\times\dfrac{1}{13}=\dfrac{17}{13}$

c. $\dfrac{\frac{3}{2}-\frac{15}{8}\times\frac{6}{27}}{\frac{5}{12}+\frac{66}{12}\times\frac{4}{33}}=\dfrac{\frac{3}{2}-\frac{\cancel{3}\times 5}{\cancel{2}\times 4}\times\frac{\cancel{2}\times 3}{\cancel{3}\times 9}}{\frac{5}{12}+\frac{\cancel{11}\times 6}{\cancel{4}\times 3}\times\frac{\cancel{4}}{\cancel{11}\times 3}}=\dfrac{\frac{3}{2}-\frac{5}{4}\times\frac{3}{9}}{\frac{5}{12}+\frac{6}{4}\times\frac{1}{3}}$

$=\dfrac{\frac{3}{2}-\frac{5}{4}\times\frac{1}{3}}{\frac{5}{12}+\frac{6}{3}\times\frac{1}{3}}=\dfrac{\frac{3}{2}-\frac{5}{12}}{\frac{5}{12}+\frac{2}{3}}=\dfrac{\frac{18}{12}-\frac{5}{12}}{\frac{5}{12}+\frac{8}{12}}=\dfrac{\frac{18-5}{12}}{\frac{5}{12}+\frac{8}{12}}$

$=\dfrac{\frac{13}{12}}{\frac{13}{12}}=\dfrac{13}{12}\times\dfrac{12}{13}=1$