Correction :Partie 3

Niveau 1 :

1) $\frac{4}{5} \times \frac{15}{8} = \frac{2 \times 2 \times 3 \times 5}{5 \times 2 \times 2 \times 2} = \frac{3}{2}$; $\frac{9}{21} \times 7 = \frac{3 \times 3 \times 7}{3 \times 7} = 3$; $\frac{14}{28} \times \frac{18}{12} = \frac{2 \times 7 \times 2 \times 3 \times 3}{2 \times 2 \times 7 \times 2 \times 3 \times 2} = \frac{3}{4}$;

$\frac{20}{75} \times \frac{25}{16} = \frac{2 \times 2 \times 5 \times 5 \times 5}{5 \times 5 \times 3 \times 2 \times 2 \times 2 \times 2} = \frac{5}{12}$; $30 \times \frac{7}{14} = \frac{3 \times 2 \times 5 \times 7}{3 \times 7} = 15$

2) $\frac{15}{14} \times \frac{7}{3} = \frac{3 \times 5 \times 7}{2 \times 7 \times 3} = \frac{5}{2}$; $\frac{7}{15} \times \frac{20}{14} = \frac{7 \times 2 \times 2 \times 5}{3 \times 5 \times 2 \times 7} = \frac{2}{3}$;

$\frac{14}{15} \times \frac{28}{49} = \frac{2 \times 7 \times 2 \times 7 \times 2}{3 \times 5 \times 7 \times 7} = \frac{8}{15}$; $\frac{15}{18} \times \frac{9}{30} = \frac{5 \times 3 \times 3 \times 3}{2 \times 3 \times 3 \times 2 \times 3 \times 5} = \frac{1}{4}$; $\frac{18}{27} \times \frac{45}{30} = \frac{2 \times 3 \times 3 \times 3 \times 3 \times 5}{3 \times 3 \times 3 \times 3 \times 2 \times 5} = 1$

3) $\frac{6}{15} \times \frac{5}{3} = \frac{2 \times 3 \times 5}{3 \times 5 \times 3} = \frac{2}{3}$; $\frac{15}{14} \times \frac{28}{10} = \frac{3 \times 5 \times 2 \times 2 \times 7}{2 \times 7 \times 2 \times 5} = 3$; $35 \times \frac{15}{25} = \frac{5 \times 7 \times 3 \times 5}{5 \times 5} = 21$;

$\frac{32}{16} \times \frac{28}{14} = \frac{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 7}{2 \times 2 \times 2 \times 2 \times 7} = 4$; $\frac{35}{28} \times \frac{20}{10} = \frac{5 \times 7 \times 2 \times 2 \times 5}{2 \times 2 \times 7 \times 2 \times 5} = \frac{5}{2}$

4) $\frac{36}{49} \times \frac{210}{90} = \frac{2 \times 3 \times 2 \times 3 \times 3 \times 7 \times 2 \times 5}{7 \times 7 \times 3 \times 3 \times 2 \times 5} = \frac{12}{7}$; $\frac{54}{81} \times \frac{18}{12} = \frac{2 \times 3 \times 3 \times 3 \times 3 \times 3 \times 2}{3 \times 3 \times 3 \times 3 \times 2 \times 2} = 1$;

$\frac{120}{54} \times \frac{36}{12} = \frac{2 \times 2 \times 3 \times 2 \times 5 \times 2 \times 3 \times 2 \times 3}{2 \times 3 \times 3 \times 3 \times 3 \times 2 \times 2} = \frac{20}{3}$; $\frac{81}{243} \times \frac{72}{16} = \frac{3 \times 3 \times 3 \times 3 \times 2 \times 3 \times 3 \times 2 \times 2}{3 \times 3 \times 3 \times 3 \times 3 \times 2 \times 2 \times 2 \times 2} = \frac{3}{2}$; $\frac{56}{16} \times \frac{28}{14} = \frac{2 \times 2 \times 2 \times 7 \times 2 \times 2 \times 7}{2 \times 2 \times 2 \times 2 \times 2 \times 7} = 7$

Niveau 2 :

1) $\frac{360}{720} \times 225 = \frac{2 \times 3 \times 2 \times 3 \times 2 \times 5 \times 5 \times 3 \times 3}{2 \times 5 \times 2 \times 3 \times 2 \times 3 \times 2} = \frac{225}{2}$; $\frac{396}{155} \times \frac{42}{252} = \frac{3 \times 3 \times 2 \times 2 \times 11 \times 2 \times 3 \times 7}{5 \times 31 \times 2 \times 2 \times 3 \times 3 \times 7} = \frac{66}{155}$;

$\frac{432}{648} \times \frac{93}{62} = \frac{2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 31}{2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 2 \times 31} = 1$; $\frac{425}{765} \times \frac{65}{55} = \frac{5 \times 5 \times 17 \times 5 \times 13}{5 \times 3 \times 3 \times 17 \times 5 \times 11} = \frac{65}{99}$

2) $\frac{28}{56} \times \frac{36}{64} = \frac{2 \times 2 \times 7 \times 2 \times 3 \times 2 \times 3}{2 \times 2 \times 2 \times 7 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2} = \frac{9}{32}$; $\frac{273}{585} \times \frac{195}{504} = \frac{3 \times 7 \times 13 \times 5 \times 3 \times 13}{5 \times 3 \times 3 \times 13 \times 2 \times 2 \times 2 \times 3 \times 3 \times 7} = \frac{13}{72}$;

$\frac{180}{315} \times \frac{162}{168} = \frac{2 \times 3 \times 3 \times 2 \times 5 \times 2 \times 3 \times 3 \times 3 \times 3}{3 \times 5 \times 3 \times 7 \times 2 \times 2 \times 2 \times 3 \times 7} = \frac{27}{49}$; $\frac{108}{528} \times 231 = \frac{2 \times 2 \times 3 \times 3 \times 3 \times 7 \times 11}{2 \times 2 \times 2 \times 2 \times 3 \times 11} = \frac{189}{4}$

3) $\frac{42}{49} \times \frac{210}{90} = \frac{2 \times 3 \times 7 \times 2 \times 5 \times 3 \times 7}{7 \times 7 \times 3 \times 3 \times 2 \times 5} = 2$; $\frac{26}{52} \times \frac{18}{54} = \frac{2 \times 13 \times 2 \times 3 \times 3}{2 \times 2 \times 13 \times 2 \times 3 \times 3 \times 3} = \frac{1}{6}$;

$\frac{120}{243} \times \frac{36}{63} = \frac{2 \times 2 \times 3 \times 2 \times 5 \times 2 \times 3 \times 2 \times 3}{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 7} = \frac{160}{567}$; $\frac{48}{147} \times 49 = \frac{2 \times 2 \times 2 \times 2 \times 3 \times 7 \times 7}{7 \times 7 \times 3} = 16$

Niveau 3 :

1) $\frac{36}{49} \times \frac{210}{90} \times \frac{45}{81} = \frac{2 \times 3 \times 3 \times 2 \times 3 \times 7 \times 2 \times 5 \times 5 \times 3 \times 3}{7 \times 7 \times 3 \times 3 \times 2 \times 5 \times 3 \times 3 \times 3 \times 3} = \frac{20}{21}$; $\frac{26}{39} \times \frac{18}{54} \times \frac{75}{60} = \frac{2 \times 13 \times 2 \times 3 \times 3 \times 5 \times 5 \times 3}{3 \times 13 \times 2 \times 3 \times 3 \times 3 \times 2 \times 3 \times 2 \times 5} = \frac{10}{36}$

$\frac{120}{243} \times \frac{36}{210} \times \frac{63}{90} = \frac{2 \times 2 \times 3 \times 2 \times 5 \times 2 \times 3 \times 2 \times 3 \times 3 \times 3 \times 7}{3 \times 3 \times 3 \times 3 \times 3 \times 7 \times 2 \times 5 \times 3 \times 3 \times 2 \times 5} = \frac{56}{945}$.

2) $\frac{45}{108} \times \frac{162}{216} \times \frac{36}{25} = \frac{3 \times 3 \times 5 \times 2 \times 3 \times 3 \times 3 \times 3 \times 2 \times 3 \times 2 \times 3}{2 \times 2 \times 3 \times 3 \times 3 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 5} = \frac{9}{20}$

$\frac{56}{150} \times \frac{675}{32} \times \frac{108}{135} = \frac{2 \times 2 \times 2 \times 7 \times 5 \times 5 \times 3 \times 3 \times 3 \times 2 \times 2 \times 3 \times 3 \times 3}{5 \times 3 \times 2 \times 5 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 3 \times 3 \times 3} = \frac{63}{10}$

$\frac{168}{165} \times \frac{126}{270} \times \frac{220}{336} = \frac{2 \times 2 \times 3 \times 7 \times 2 \times 2 \times 3 \times 3 \times 7 \times 2 \times 11 \times 2 \times 5}{5 \times 3 \times 11 \times 3 \times 3 \times 3 \times 2 \times 5 \times 3 \times 2 \times 2 \times 2 \times 2 \times 7} = \frac{14}{45}$

3) $\frac{54}{147} \times \frac{156}{325} \times 36 = \frac{2 \times 3 \times 3 \times 3 \times 2 \times 3 \times 2 \times 13 \times 2 \times 3 \times 2 \times 3}{3 \times 7 \times 7 \times 5 \times 5 \times 13} = \frac{7\,776}{1\,225}$

$\frac{81}{243} \times \frac{270}{405} \times \frac{168}{480} = \frac{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 2 \times 5 \times 2 \times 2 \times 3 \times 7 \times 2}{3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 3 \times 3 \times 3 \times 2 \times 5 \times 2 \times 2 \times 2 \times 2 \times 3} = \frac{7}{90}$

$\frac{150}{245} \times \frac{686}{196} \times \frac{672}{350} = \frac{3 \times 5 \times 2 \times 5 \times 2 \times 7 \times 7 \times 7 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 7}{5 \times 7 \times 7 \times 2 \times 2 \times 7 \times 7 \times 7 \times 5 \times 2 \times 5} = \frac{144}{35}$