Corrigé de l'exercice 1

Calculer les expressions suivantes et donner le résultat sous la forme d'une fraction irréductible.

$$A = \frac{-1}{10} \div \left(\frac{13}{6} - \frac{-3}{5}\right)$$
$$A = \frac{-1}{10} \div \left(\frac{13_{\times 5}}{6_{\times 5}} - \frac{-3_{\times 6}}{5_{\times 6}}\right)$$
$$A = \frac{-1}{10} \div \left(\frac{65}{30} - \frac{-18}{30}\right)$$
$$A = \frac{-1}{10} \div \frac{83}{30}$$
$$A = \frac{-1}{10} \times \frac{30}{83}$$
$$A = \frac{-1}{1 \times \cancel{10}} \times \frac{3 \times \cancel{10}}{83}$$
$$\boxed{A = \frac{-3}{83}}$$

$$B = -14 - \frac{7}{2} \div \frac{-49}{20}$$
$$B = -14 - \frac{7}{2} \times \frac{-20}{49}$$
$$B = -14 - \frac{1 \times \cancel{7}}{-1 \times \cancel{-2}} \times \frac{10 \times \cancel{-2}}{7 \times \cancel{7}}$$
$$B = -14 - \frac{-10}{7}$$
$$B = \frac{-14_{\times 7}}{1_{\times 7}} - \frac{-10}{7}$$
$$B = \frac{-98}{7} - \frac{-10}{7}$$
$$\boxed{B = \frac{-88}{7}}$$

$$C = \frac{\frac{3}{2} - 5}{\frac{5}{4} - 7}$$
$$C = \frac{\frac{3}{2} - \frac{5_{\times 2}}{1_{\times 2}}}{\frac{5}{4} - \frac{7_{\times 4}}{1_{\times 4}}}$$
$$C = \frac{\frac{3}{2} - \frac{10}{2}}{\frac{5}{4} - \frac{28}{4}}$$
$$C = \frac{-7}{2} \div \frac{-23}{4}$$
$$C = \frac{-7}{2} \times \frac{-4}{23}$$
$$C = \frac{-7}{-1 \times \cancel{-2}} \times \frac{2 \times \cancel{-2}}{23}$$
$$\boxed{C = \frac{14}{23}}$$

Corrigé de l'exercice 2

Calculer les expressions suivantes et donner le résultat sous la forme d'une fraction irréductible.

$$A = \frac{10}{7} \times \left(\frac{-13}{2} + \frac{12}{7}\right)$$
$$A = \frac{10}{7} \times \left(\frac{-13_{\times 7}}{2_{\times 7}} + \frac{12_{\times 2}}{7_{\times 2}}\right)$$
$$A = \frac{10}{7} \times \left(\frac{-91}{14} + \frac{24}{14}\right)$$
$$A = \frac{10}{7} \times \frac{-67}{14}$$
$$A = \frac{5 \times \cancel{2}}{-7 \times \cancel{-1}} \times \frac{67 \times \cancel{-1}}{7 \times \cancel{2}}$$
$$\boxed{A = \frac{-335}{49}}$$

$$B = \frac{-18}{5} + \frac{63}{20} \times \frac{-40}{27}$$
$$B = \frac{-18}{5} + \frac{7 \times \cancel{9}}{-1 \times \cancel{-20}} \times \frac{2 \times \cancel{-20}}{3 \times \cancel{9}}$$
$$B = \frac{-18}{5} + \frac{-14}{3}$$
$$B = \frac{-18_{\times 3}}{5_{\times 3}} + \frac{-14_{\times 5}}{3_{\times 5}}$$
$$B = \frac{-54}{15} + \frac{-70}{15}$$
$$\boxed{B = \frac{-124}{15}}$$

$$C = \frac{\frac{-5}{3} + 7}{\frac{-7}{8} + 6}$$
$$C = \frac{\frac{-5}{3} + \frac{7_{\times 3}}{1_{\times 3}}}{\frac{-7}{8} + \frac{6_{\times 8}}{1_{\times 8}}}$$
$$C = \frac{\frac{-5}{3} + \frac{21}{3}}{\frac{-7}{8} + \frac{48}{8}}$$
$$C = \frac{16}{3} \div \frac{41}{8}$$
$$C = \frac{16}{3} \times \frac{8}{41}$$
$$C =$$
$$\boxed{C = \frac{128}{123}}$$

Corrigé de l'exercice 3

Calculer les expressions suivantes et donner le résultat sous la forme d'une fraction irréductible.

$$A = \frac{-3}{5} \times \left(\frac{-7}{13} + \frac{-7}{2} \right)$$
$$A = \frac{-3}{5} \times \left(\frac{-7_{\times 2}}{13_{\times 2}} + \frac{-7_{\times 13}}{2_{\times 13}} \right)$$
$$A = \frac{-3}{5} \times \left(\frac{-14}{26} + \frac{-91}{26} \right)$$
$$A = \frac{-3}{5} \times \frac{-105}{26}$$
$$A = \frac{-3}{-1 \times \cancel{5}} \times \frac{21 \times \cancel{5}}{26}$$
$$\boxed{A = \frac{63}{26}}$$

$$B = \frac{-80}{9} + \frac{100}{27} \div \frac{-4}{3}$$
$$B = \frac{-80}{9} + \frac{100}{27} \times \frac{-3}{4}$$
$$B = \frac{-80}{9} + \frac{25 \times \cancel{4}}{-9 \times \cancel{3}} \times \frac{1 \times \cancel{3}}{1 \times \cancel{4}}$$
$$B = \frac{-80}{9} + \frac{-25}{9}$$
$$B =$$
$$B = \frac{-80}{9} + \frac{-25}{9}$$
$$B = \frac{-105}{9}$$
$$\boxed{B = \frac{-35}{3}}$$

$$C = \frac{\frac{9}{7} + 6}{\frac{7}{5} + 8}$$
$$C = \frac{\frac{9}{7} + \frac{6_{\times 7}}{1_{\times 7}}}{\frac{7}{5} + \frac{8_{\times 5}}{1_{\times 5}}}$$
$$C = \frac{\frac{9}{7} + \frac{42}{7}}{\frac{7}{5} + \frac{40}{5}}$$
$$C = \frac{51}{7} \div \frac{47}{5}$$
$$C = \frac{51}{7} \times \frac{5}{47}$$
$$C =$$
$$\boxed{C = \frac{255}{329}}$$

Corrigé de l'exercice 4

Calculer les expressions suivantes et donner le résultat sous la forme d'une fraction irréductible.

$$A = \frac{\frac{-5}{3} - 10}{\frac{5}{8} - 4}$$
$$A = \frac{\frac{-5}{3} - \frac{10_{\times 3}}{1_{\times 3}}}{\frac{5}{8} - \frac{4_{\times 8}}{1_{\times 8}}}$$
$$A = \frac{\frac{-5}{3} - \frac{30}{3}}{\frac{5}{8} - \frac{32}{8}}$$
$$A = \frac{-35}{3} \div \frac{-27}{8}$$
$$A = \frac{-35}{3} \times \frac{-8}{27}$$
$$A = \frac{-35}{-3 \times \cancel{-1}} \times \frac{8 \times \cancel{-1}}{27}$$
$$\boxed{A = \frac{280}{81}}$$

$$B = \frac{40}{13} + \frac{18}{13} \times \frac{-13}{25}$$
$$B = \frac{40}{13} + \frac{18}{-1 \times \cancel{-13}} \times \frac{1 \times \cancel{-13}}{25}$$
$$B = \frac{40}{13} + \frac{-18}{25}$$
$$B = \frac{40_{\times 25}}{13_{\times 25}} + \frac{-18_{\times 13}}{25_{\times 13}}$$
$$B = \frac{1000}{325} + \frac{-234}{325}$$
$$\boxed{B = \frac{766}{325}}$$

$$C = \frac{-2}{5} \times \left(\frac{-10}{7} + \frac{7}{10} \right)$$
$$C = \frac{-2}{5} \times \left(\frac{-10_{\times 10}}{7_{\times 10}} + \frac{7_{\times 7}}{10_{\times 7}} \right)$$
$$C = \frac{-2}{5} \times \left(\frac{-100}{70} + \frac{49}{70} \right)$$
$$C = \frac{-2}{5} \times \frac{-51}{70}$$
$$C = \frac{-1 \times \cancel{2}}{-5 \times \cancel{-1}} \times \frac{51 \times \cancel{-1}}{35 \times \cancel{2}}$$
$$\boxed{C = \frac{51}{175}}$$

Corrigé de l'exercice 5

Calculer les expressions suivantes et donner le résultat sous la forme d'une fraction irréductible.

$$A = \frac{\frac{2}{5} - 4}{\frac{-9}{7} + 3}$$

$$A = \frac{\frac{2}{5} - \frac{4_{\times 5}}{1_{\times 5}}}{\frac{-9}{7} + \frac{3_{\times 7}}{1_{\times 7}}}$$

$$A = \frac{\frac{2}{5} - \frac{20}{5}}{\frac{-9}{7} + \frac{21}{7}}$$

$$A = \frac{-18}{5} \div \frac{12}{7}$$

$$A = \frac{-18}{5} \times \frac{7}{12}$$

$$A = \frac{-3 \times \cancel{6}}{5} \times \frac{7}{2 \times \cancel{6}}$$

$$\boxed{A = \frac{-21}{10}}$$

$$B = \frac{-28}{3} + \frac{-35}{18} \div \frac{7}{3}$$

$$B = \frac{-28}{3} + \frac{-35}{18} \times \frac{3}{7}$$

$$B = \frac{-28}{3} + \frac{-5 \times \cancel{7}}{6 \times \cancel{3}} \times \frac{1 \times \cancel{3}}{1 \times \cancel{7}}$$

$$B = \frac{-28}{3} + \frac{-5}{6}$$

$$B = \frac{-28_{\times 2}}{3_{\times 2}} + \frac{-5}{6}$$

$$B = \frac{-56}{6} + \frac{-5}{6}$$

$$\boxed{B = \frac{-61}{6}}$$

$$C = \frac{-4}{3} \div \left(\frac{13}{4} + \frac{-8}{3}\right)$$

$$C = \frac{-4}{3} \div \left(\frac{13_{\times 3}}{4_{\times 3}} + \frac{-8_{\times 4}}{3_{\times 4}}\right)$$

$$C = \frac{-4}{3} \div \left(\frac{39}{12} + \frac{-32}{12}\right)$$

$$C = \frac{-4}{3} \div \frac{7}{12}$$

$$C = \frac{-4}{3} \times \frac{12}{7}$$

$$C = \frac{-4}{1 \times \cancel{3}} \times \frac{4 \times \cancel{3}}{7}$$

$$\boxed{C = \frac{-16}{7}}$$

Corrigé de l'exercice 6

Calculer les expressions suivantes et donner le résultat sous la forme d'une fraction irréductible.

$$A = \frac{8}{5} + \frac{8}{5} \div \frac{-48}{5}$$

$$A = \frac{8}{5} + \frac{8}{5} \times \frac{-5}{48}$$

$$A = \frac{8}{5} + \frac{1 \times \cancel{8}}{-1 \times \cancel{5}} \times \frac{1 \times \cancel{5}}{6 \times \cancel{8}}$$

$$A = \frac{8}{5} + \frac{-1}{6}$$

$$A = \frac{8_{\times 6}}{5_{\times 6}} + \frac{-1_{\times 5}}{6_{\times 5}}$$

$$A = \frac{48}{30} + \frac{-5}{30}$$

$$\boxed{A = \frac{43}{30}}$$

$$B = \frac{\frac{-9}{4} + 1}{\frac{-1}{9} - 6}$$

$$B = \frac{\frac{-9}{4} + \frac{1_{\times 4}}{1_{\times 4}}}{\frac{-1}{9} - \frac{6_{\times 9}}{1_{\times 9}}}$$

$$B = \frac{\frac{-9}{4} + \frac{4}{4}}{\frac{-1}{9} - \frac{54}{9}}$$

$$B = \frac{-5}{4} \div \frac{-55}{9}$$

$$B = \frac{-5}{4} \times \frac{-9}{55}$$

$$B = \frac{-1 \times \cancel{5}}{-4 \times \cancel{-1}} \times \frac{9 \times \cancel{-1}}{11 \times \cancel{5}}$$

$$\boxed{B = \frac{9}{44}}$$

$$C = \frac{3}{5} \times \left(\frac{2}{11} + \frac{-1}{4}\right)$$

$$C = \frac{3}{5} \times \left(\frac{2_{\times 4}}{11_{\times 4}} + \frac{-1_{\times 11}}{4_{\times 11}}\right)$$

$$C = \frac{3}{5} \times \left(\frac{8}{44} + \frac{-11}{44}\right)$$

$$C = \frac{3}{5} \times \frac{-3}{44}$$

$$C = \frac{3}{-5 \times \cancel{-1}} \times \frac{3 \times \cancel{-1}}{44}$$

$$\boxed{C = \frac{-9}{220}}$$