Corrigé de l'exercice 1

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

$$A = \frac{-2}{3} \div \left(\frac{-1}{4} - \frac{4}{3}\right)$$
$$A = \frac{-2}{3} \div \left(\frac{-1_{\times 3}}{4_{\times 3}} - \frac{4_{\times 4}}{3_{\times 4}}\right)$$
$$A = \frac{-2}{3} \div \left(\frac{-3}{12} - \frac{16}{12}\right)$$
$$A = \frac{-2}{3} \div \frac{-19}{12}$$
$$A = \frac{-2}{3} \times \frac{-12}{19}$$
$$A = \frac{-2}{-1 \times \cancel{-3}} \times \frac{4 \times \cancel{-3}}{19}$$
$$\boxed{A = \frac{8}{19}}$$

$$B = \frac{-13}{2} - \frac{-13}{20} \times \frac{6}{13}$$
$$B = \frac{-13}{2} - \frac{-1 \times \cancel{13}}{10 \times \cancel{2}} \times \frac{3 \times \cancel{2}}{1 \times \cancel{13}}$$
$$B = \frac{-13}{2} - \frac{-3}{10}$$
$$B = \frac{-13_{\times 5}}{2_{\times 5}} - \frac{-3}{10}$$
$$B = \frac{-65}{10} - \frac{-3}{10}$$
$$B = \frac{-62}{10}$$
$$\boxed{B = \frac{-31}{5}}$$

$$C = \frac{\frac{-2}{9} + 10}{\frac{-1}{9} + 8}$$
$$C = \frac{\frac{-2}{9} + \frac{10_{\times 9}}{1_{\times 9}}}{\frac{-1}{9} + \frac{8_{\times 9}}{1_{\times 9}}}$$
$$C = \frac{\frac{-2}{9} + \frac{90}{9}}{\frac{-1}{9} + \frac{72}{9}}$$
$$C = \frac{88}{9} \div \frac{71}{9}$$
$$C = \frac{88}{9} \times \frac{9}{71}$$
$$C = \frac{88}{1 \times \cancel{9}} \times \frac{1 \times \cancel{9}}{71}$$
$$\boxed{C = \frac{88}{71}}$$

Corrigé de l'exercice 2

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

$$A = \frac{-3}{2} \div \left(\frac{6}{5} - \frac{-9}{8}\right)$$
$$A = \frac{-3}{2} \div \left(\frac{6_{\times 8}}{5_{\times 8}} - \frac{-9_{\times 5}}{8_{\times 5}}\right)$$
$$A = \frac{-3}{2} \div \left(\frac{48}{40} - \frac{-45}{40}\right)$$
$$A = \frac{-3}{2} \div \frac{93}{40}$$
$$A = \frac{-3}{2} \times \frac{40}{93}$$
$$A = \frac{-1 \times \cancel{3}}{1 \times \cancel{2}} \times \frac{20 \times \cancel{2}}{31 \times \cancel{3}}$$
$$\boxed{A = \frac{-20}{31}}$$

$$B = \frac{\frac{8}{7} + 5}{\frac{-1}{3} - 9}$$
$$B = \frac{\frac{8}{7} + \frac{5_{\times 7}}{1_{\times 7}}}{\frac{-1}{3} - \frac{9_{\times 3}}{1_{\times 3}}}$$
$$B = \frac{\frac{8}{7} + \frac{35}{7}}{\frac{-1}{3} - \frac{27}{3}}$$
$$B = \frac{43}{7} \div \frac{-28}{3}$$
$$B = \frac{43}{7} \times \frac{-3}{28}$$
$$B = \frac{43}{-7 \times \cancel{-1}} \times \frac{3 \times \cancel{-1}}{28}$$
$$\boxed{B = \frac{-129}{196}}$$

$$C = \frac{60}{7} - \frac{-4}{7} \div \frac{-4}{7}$$
$$C = \frac{60}{7} - \frac{-4}{7} \times \frac{-7}{4}$$
$$C = \frac{60}{7} - \frac{-1 \times \cancel{4}}{-1 \times \cancel{-7}} \times \frac{1 \times \cancel{-7}}{1 \times \cancel{4}}$$
$$C = \frac{60}{7} - 1$$
$$C = \frac{60}{7} - \frac{1_{\times 7}}{1_{\times 7}}$$
$$C = \frac{60}{7} - \frac{7}{7}$$
$$\boxed{C = \frac{53}{7}}$$

Corrigé de l'exercice 3

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

$$A = \frac{-10}{3} - \frac{25}{6} \div \frac{50}{27}$$
$$A = \frac{-10}{3} - \frac{25}{6} \times \frac{27}{50}$$
$$A = \frac{-10}{3} - \frac{1 \times \cancel{25}}{2 \times \cancel{3}} \times \frac{9 \times \cancel{3}}{2 \times \cancel{25}}$$
$$A = \frac{-10}{3} - \frac{9}{4}$$
$$A = \frac{-10_{\times 4}}{3_{\times 4}} - \frac{9_{\times 3}}{4_{\times 3}}$$
$$A = \frac{-40}{12} - \frac{27}{12}$$
$$\boxed{A = \frac{-67}{12}}$$

$$B = \frac{\frac{-8}{9} + 8}{\frac{4}{3} - 6}$$
$$B = \frac{\frac{-8}{9} + \frac{8_{\times 9}}{1_{\times 9}}}{\frac{4}{3} - \frac{6_{\times 3}}{1_{\times 3}}}$$
$$B = \frac{\frac{-8}{9} + \frac{72}{9}}{\frac{4}{3} - \frac{18}{3}}$$
$$B = \frac{64}{9} \div \frac{-14}{3}$$
$$B = \frac{64}{9} \times \frac{-3}{14}$$
$$B = \frac{32 \times \cancel{2}}{-3 \times \cancel{-3}} \times \frac{1 \times \cancel{-3}}{7 \times \cancel{2}}$$
$$\boxed{B = \frac{-32}{21}}$$

$$C = \frac{-5}{7} \times \left(\frac{-4}{5} - \frac{-11}{3} \right)$$
$$C = \frac{-5}{7} \times \left(\frac{-4_{\times 3}}{5_{\times 3}} - \frac{-11_{\times 5}}{3_{\times 5}} \right)$$
$$C = \frac{-5}{7} \times \left(\frac{-12}{15} - \frac{-55}{15} \right)$$
$$C = \frac{-5}{7} \times \frac{43}{15}$$
$$C = \frac{-1 \times \cancel{5}}{7} \times \frac{43}{3 \times \cancel{5}}$$
$$\boxed{C = \frac{-43}{21}}$$

Corrigé de l'exercice 4

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

$$A = \frac{9}{7} \times \left(\frac{13}{3} - \frac{9}{2} \right)$$
$$A = \frac{9}{7} \times \left(\frac{13_{\times 2}}{3_{\times 2}} - \frac{9_{\times 3}}{2_{\times 3}} \right)$$
$$A = \frac{9}{7} \times \left(\frac{26}{6} - \frac{27}{6} \right)$$
$$A = \frac{9}{7} \times \frac{-1}{6}$$
$$A = \frac{3 \times \cancel{3}}{-7 \times \cancel{-1}} \times \frac{1 \times \cancel{-1}}{2 \times \cancel{3}}$$
$$\boxed{A = \frac{-3}{14}}$$

$$B = \frac{\frac{5}{4} + 8}{\frac{10}{9} + 4}$$
$$B = \frac{\frac{5}{4} + \frac{8_{\times 4}}{1_{\times 4}}}{\frac{10}{9} + \frac{4_{\times 9}}{1_{\times 9}}}$$
$$B = \frac{\frac{5}{4} + \frac{32}{4}}{\frac{10}{9} + \frac{36}{9}}$$
$$B = \frac{37}{4} \div \frac{46}{9}$$
$$B = \frac{37}{4} \times \frac{9}{46}$$
$$B =$$
$$\boxed{B = \frac{333}{184}}$$

$$C = -18 - \frac{-9}{2} \times \frac{40}{9}$$
$$C = -18 - \frac{-1 \times \cancel{9}}{1 \times \cancel{2}} \times \frac{20 \times \cancel{2}}{1 \times \cancel{9}}$$
$$C = -18 - -20$$
$$C =$$
$$C = \frac{-18}{1} - \frac{-20}{1}$$
$$\boxed{C = 2}$$

Corrigé de l'exercice 5

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

$$A = \frac{104}{33} - \frac{-91}{33} \times \frac{44}{13}$$
$$A = \frac{104}{33} - \frac{-7 \times \cancel{13}}{3 \times \cancel{11}} \times \frac{4 \times \cancel{11}}{1 \times \cancel{13}}$$
$$A = \frac{104}{33} - \frac{-28}{3}$$
$$A = \frac{104}{33} - \frac{-28_{\times 11}}{3_{\times 11}}$$
$$A = \frac{104}{33} - \frac{-308}{33}$$
$$\boxed{A = \frac{412}{33}}$$

$$B = \frac{\frac{-1}{2} + 6}{\frac{10}{7} + 5}$$
$$B = \frac{\frac{-1}{2} + \frac{6_{\times 2}}{1_{\times 2}}}{\frac{10}{7} + \frac{5_{\times 7}}{1_{\times 7}}}$$
$$B = \frac{\frac{-1}{2} + \frac{12}{2}}{\frac{10}{7} + \frac{35}{7}}$$
$$B = \frac{11}{2} \div \frac{45}{7}$$
$$B = \frac{11}{2} \times \frac{7}{45}$$
$$B =$$
$$\boxed{B = \frac{77}{90}}$$

$$C = \frac{3}{10} \div \left(\frac{-7}{10} + \frac{2}{9}\right)$$
$$C = \frac{3}{10} \div \left(\frac{-7_{\times 9}}{10_{\times 9}} + \frac{2_{\times 10}}{9_{\times 10}}\right)$$
$$C = \frac{3}{10} \div \left(\frac{-63}{90} + \frac{20}{90}\right)$$
$$C = \frac{3}{10} \div \frac{-43}{90}$$
$$C = \frac{3}{10} \times \frac{-90}{43}$$
$$C = \frac{3}{-1 \times \cancel{-10}} \times \frac{9 \times \cancel{-10}}{43}$$
$$\boxed{C = \frac{-27}{43}}$$

Corrigé de l'exercice 6

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

$$A = \frac{-12}{5} - \frac{6}{5} \div \frac{18}{25}$$
$$A = \frac{-12}{5} - \frac{6}{5} \times \frac{25}{18}$$
$$A = \frac{-12}{5} - \frac{1 \times \cancel{6}}{1 \times \cancel{5}} \times \frac{5 \times \cancel{5}}{3 \times \cancel{6}}$$
$$A = \frac{-12}{5} - \frac{5}{3}$$
$$A = \frac{-12_{\times 3}}{5_{\times 3}} - \frac{5_{\times 5}}{3_{\times 5}}$$
$$A = \frac{-36}{15} - \frac{25}{15}$$
$$\boxed{A = \frac{-61}{15}}$$

$$B = \frac{3}{4} \times \left(\frac{8}{9} + \frac{9}{11}\right)$$
$$B = \frac{3}{4} \times \left(\frac{8_{\times 11}}{9_{\times 11}} + \frac{9_{\times 9}}{11_{\times 9}}\right)$$
$$B = \frac{3}{4} \times \left(\frac{88}{99} + \frac{81}{99}\right)$$
$$B = \frac{3}{4} \times \frac{169}{99}$$
$$B = \frac{1 \times \cancel{3}}{4} \times \frac{169}{33 \times \cancel{3}}$$
$$\boxed{B = \frac{169}{132}}$$

$$C = \frac{\frac{-10}{7} - 2}{\frac{-3}{8} + 9}$$
$$C = \frac{\frac{-10}{7} - \frac{2_{\times 7}}{1_{\times 7}}}{\frac{-3}{8} + \frac{9_{\times 8}}{1_{\times 8}}}$$
$$C = \frac{\frac{-10}{7} - \frac{14}{7}}{\frac{-3}{8} + \frac{72}{8}}$$
$$C = \frac{-24}{7} \div \frac{69}{8}$$
$$C = \frac{-24}{7} \times \frac{8}{69}$$
$$C = \frac{-8 \times \cancel{3}}{7} \times \frac{8}{23 \times \cancel{3}}$$
$$\boxed{C = \frac{-64}{161}}$$