Corrigé de l'exercice 1

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

$$A = \frac{5}{8} \div \left(\frac{-11}{9} + \frac{11}{7} \right)$$
$$A = \frac{5}{8} \div \left(\frac{-11_{\times 7}}{9_{\times 7}} + \frac{11_{\times 9}}{7_{\times 9}} \right)$$
$$A = \frac{5}{8} \div \left(\frac{-77}{63} + \frac{99}{63} \right)$$
$$A = \frac{5}{8} \div \frac{22}{63}$$
$$A = \frac{5}{8} \times \frac{63}{22}$$
$$A =$$
$$\boxed{A = \frac{315}{176}}$$

$$B = 13 - \frac{13}{2} \times \frac{1}{26}$$
$$B = 13 - \frac{1 \times \cancel{13}}{2} \times \frac{1}{2 \times \cancel{13}}$$
$$B = 13 - \frac{1}{4}$$
$$B = \frac{13_{\times 4}}{1_{\times 4}} - \frac{1}{4}$$
$$B = \frac{52}{4} - \frac{1}{4}$$
$$\boxed{B = \frac{51}{4}}$$

$$C = \frac{\frac{-1}{3} + 3}{\frac{7}{2} - 7}$$
$$C = \frac{\frac{-1}{3} + \frac{3_{\times 3}}{1_{\times 3}}}{\frac{7}{2} - \frac{7_{\times 2}}{1_{\times 2}}}$$
$$C = \frac{\frac{-1}{3} + \frac{9}{3}}{\frac{7}{2} - \frac{14}{2}}$$
$$C = \frac{8}{3} \div \frac{-7}{2}$$
$$C = \frac{8}{3} \times \frac{-2}{7}$$
$$C = \frac{8}{-3 \times \cancel{-1}} \times \frac{2 \times \cancel{-1}}{7}$$
$$\boxed{C = \frac{-16}{21}}$$

Corrigé de l'exercice 2

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

$$A = \frac{-24}{5} - \frac{-3}{5} \div \frac{-12}{5}$$
$$A = \frac{-24}{5} - \frac{-3}{5} \times \frac{-5}{12}$$
$$A = \frac{-24}{5} - \frac{-1 \times \cancel{3}}{-1 \times \cancel{-5}} \times \frac{1 \times \cancel{-5}}{4 \times \cancel{3}}$$
$$A = \frac{-24}{5} - \frac{1}{4}$$
$$A = \frac{-24_{\times 4}}{5_{\times 4}} - \frac{1_{\times 5}}{4_{\times 5}}$$
$$A = \frac{-96}{20} - \frac{5}{20}$$
$$\boxed{A = \frac{-101}{20}}$$

$$B = \frac{7}{10} \times \left(\frac{-1}{4} - \frac{-12}{5} \right)$$
$$B = \frac{7}{10} \times \left(\frac{-1_{\times 5}}{4_{\times 5}} - \frac{-12_{\times 4}}{5_{\times 4}} \right)$$
$$B = \frac{7}{10} \times \left(\frac{-5}{20} - \frac{-48}{20} \right)$$
$$B = \frac{7}{10} \times \frac{43}{20}$$
$$B =$$
$$\boxed{B = \frac{301}{200}}$$

$$C = \frac{\frac{8}{7} + 8}{\frac{7}{8} + 9}$$
$$C = \frac{\frac{8}{7} + \frac{8_{\times 7}}{1_{\times 7}}}{\frac{7}{8} + \frac{9_{\times 8}}{1_{\times 8}}}$$
$$C = \frac{\frac{8}{7} + \frac{56}{7}}{\frac{7}{8} + \frac{72}{8}}$$
$$C = \frac{64}{7} \div \frac{79}{8}$$
$$C = \frac{64}{7} \times \frac{8}{79}$$
$$C =$$
$$\boxed{C = \frac{512}{553}}$$

Corrigé de l'exercice 3

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

$$A = \frac{24}{55} - \frac{36}{55} \div \frac{-64}{11}$$
$$A = \frac{24}{55} - \frac{36}{55} \times \frac{-11}{64}$$
$$A = \frac{24}{55} - \frac{9 \times \cancel{4}}{-5 \times \cancel{-11}} \times \frac{1 \times \cancel{-11}}{16 \times \cancel{4}}$$
$$A = \frac{24}{55} - \frac{-9}{80}$$
$$A = \frac{24_{\times 16}}{55_{\times 16}} - \frac{-9_{\times 11}}{80_{\times 11}}$$
$$A = \frac{384}{880} - \frac{-99}{880}$$
$$\boxed{A = \frac{483}{880}}$$

$$B = \frac{\frac{9}{2} - 6}{\frac{10}{7} - 6}$$
$$B = \frac{\frac{9}{2} - \frac{6_{\times 2}}{1_{\times 2}}}{\frac{10}{7} - \frac{6_{\times 7}}{1_{\times 7}}}$$
$$B = \frac{\frac{9}{2} - \frac{12}{2}}{\frac{10}{7} - \frac{42}{7}}$$
$$B = \frac{-3}{2} \div \frac{-32}{7}$$
$$B = \frac{-3}{2} \times \frac{-7}{32}$$
$$B = \frac{-3}{-2 \times \cancel{-1}} \times \frac{7 \times \cancel{-1}}{32}$$
$$\boxed{B = \frac{21}{64}}$$

$$C = \frac{3}{8} \times \left(\frac{11}{8} - \frac{3}{5}\right)$$
$$C = \frac{3}{8} \times \left(\frac{11_{\times 5}}{8_{\times 5}} - \frac{3_{\times 8}}{5_{\times 8}}\right)$$
$$C = \frac{3}{8} \times \left(\frac{55}{40} - \frac{24}{40}\right)$$
$$C = \frac{3}{8} \times \frac{31}{40}$$
$$C =$$
$$\boxed{C = \frac{93}{320}}$$

Corrigé de l'exercice 4

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

$$A = -4 + \frac{16}{3} \div \frac{4}{3}$$
$$A = -4 + \frac{16}{3} \times \frac{3}{4}$$
$$A = -4 + \frac{4 \times \cancel{4}}{1 \times \cancel{3}} \times \frac{1 \times \cancel{3}}{1 \times \cancel{4}}$$
$$A = -4 + 4$$
$$A =$$
$$A = \frac{-4}{1} + \frac{4}{1}$$
$$\boxed{A = 0}$$

$$B = \frac{-8}{5} \times \left(\frac{-11}{4} - \frac{-7}{13}\right)$$
$$B = \frac{-8}{5} \times \left(\frac{-11_{\times 13}}{4_{\times 13}} - \frac{-7_{\times 4}}{13_{\times 4}}\right)$$
$$B = \frac{-8}{5} \times \left(\frac{-143}{52} - \frac{-28}{52}\right)$$
$$B = \frac{-8}{5} \times \frac{-115}{52}$$
$$B = \frac{-2 \times \cancel{4}}{-1 \times \cancel{-5}} \times \frac{23 \times \cancel{-5}}{13 \times \cancel{4}}$$
$$\boxed{B = \frac{46}{13}}$$

$$C = \frac{\frac{7}{6} - 4}{\frac{2}{9} + 9}$$
$$C = \frac{\frac{7}{6} - \frac{4_{\times 6}}{1_{\times 6}}}{\frac{2}{9} + \frac{9_{\times 9}}{1_{\times 9}}}$$
$$C = \frac{\frac{7}{6} - \frac{24}{6}}{\frac{2}{9} + \frac{81}{9}}$$
$$C = \frac{-17}{6} \div \frac{83}{9}$$
$$C = \frac{-17}{6} \times \frac{9}{83}$$
$$C = \frac{-17}{2 \times \cancel{3}} \times \frac{3 \times \cancel{3}}{83}$$
$$\boxed{C = \frac{-51}{166}}$$

Corrigé de l'exercice 5

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

$$A = 4 + \frac{4}{3} \times 1$$
$$A = 4 + \frac{4}{3}$$
$$A = \frac{4_{\times 3}}{1_{\times 3}} + \frac{4}{3}$$
$$A = \frac{12}{3} + \frac{4}{3}$$
$$\boxed{A = \frac{16}{3}}$$

$$B = \frac{\frac{8}{3} + 5}{\frac{5}{7} - 9}$$
$$B = \frac{\frac{8}{3} + \frac{5_{\times 3}}{1_{\times 3}}}{\frac{5}{7} - \frac{9_{\times 7}}{1_{\times 7}}}$$
$$B = \frac{\frac{8}{3} + \frac{15}{3}}{\frac{5}{7} - \frac{63}{7}}$$
$$B = \frac{23}{3} \div \frac{-58}{7}$$
$$B = \frac{23}{3} \times \frac{-7}{58}$$
$$B = \frac{23}{-3 \times \cancel{-1}} \times \frac{7 \times \cancel{-1}}{58}$$
$$\boxed{B = \frac{-161}{174}}$$

$$C = \frac{5}{2} \div \left(\frac{9}{5} - \frac{3}{2}\right)$$
$$C = \frac{5}{2} \div \left(\frac{9_{\times 2}}{5_{\times 2}} - \frac{3_{\times 5}}{2_{\times 5}}\right)$$
$$C = \frac{5}{2} \div \left(\frac{18}{10} - \frac{15}{10}\right)$$
$$C = \frac{5}{2} \div \frac{3}{10}$$
$$C = \frac{5}{2} \times \frac{10}{3}$$
$$C = \frac{5}{1 \times \cancel{2}} \times \frac{5 \times \cancel{2}}{3}$$
$$\boxed{C = \frac{25}{3}}$$

Corrigé de l'exercice 6

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

$$A = \frac{63}{16} - \frac{-27}{32} \times \frac{20}{9}$$
$$A = \frac{63}{16} - \frac{-3 \times \cancel{9}}{8 \times \cancel{4}} \times \frac{5 \times \cancel{4}}{1 \times \cancel{9}}$$
$$A = \frac{63}{16} - \frac{-15}{8}$$
$$A = \frac{63}{16} - \frac{-15_{\times 2}}{8_{\times 2}}$$
$$A = \frac{63}{16} - \frac{-30}{16}$$
$$\boxed{A = \frac{93}{16}}$$

$$B = \frac{\frac{-5}{3} + 10}{\frac{-5}{6} - 5}$$
$$B = \frac{\frac{-5}{3} + \frac{10_{\times 3}}{1_{\times 3}}}{\frac{-5}{6} - \frac{5_{\times 6}}{1_{\times 6}}}$$
$$B = \frac{\frac{-5}{3} + \frac{30}{3}}{\frac{-5}{6} - \frac{30}{6}}$$
$$B = \frac{25}{3} \div \frac{-35}{6}$$
$$B = \frac{25}{3} \times \frac{-6}{35}$$
$$B = \frac{5 \times \cancel{5}}{-1 \times \cancel{-3}} \times \frac{2 \times \cancel{-3}}{7 \times \cancel{5}}$$
$$\boxed{B = \frac{-10}{7}}$$

$$C = \frac{2}{3} \div \left(\frac{10}{3} - \frac{7}{8}\right)$$
$$C = \frac{2}{3} \div \left(\frac{10_{\times 8}}{3_{\times 8}} - \frac{7_{\times 3}}{8_{\times 3}}\right)$$
$$C = \frac{2}{3} \div \left(\frac{80}{24} - \frac{21}{24}\right)$$
$$C = \frac{2}{3} \div \frac{59}{24}$$
$$C = \frac{2}{3} \times \frac{24}{59}$$
$$C = \frac{2}{1 \times \cancel{3}} \times \frac{8 \times \cancel{3}}{59}$$
$$\boxed{C = \frac{16}{59}}$$