Corrigé de l'exercice 1

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

$$A = \frac{-90}{7} - \frac{-9}{35} \div \frac{9}{7}$$
$$A = \frac{-90}{7} - \frac{-9}{35} \times \frac{7}{9}$$
$$A = \frac{-90}{7} - \frac{-1 \times \cancel{9}}{5 \times \cancel{7}} \times \frac{1 \times \cancel{7}}{1 \times \cancel{9}}$$
$$A = \frac{-90}{7} - \frac{-1}{5}$$
$$A = \frac{-90_{\times 5}}{7_{\times 5}} - \frac{-1_{\times 7}}{5_{\times 7}}$$
$$A = \frac{-450}{35} - \frac{-7}{35}$$
$$\boxed{A = \frac{-443}{35}}$$

$$B = \frac{\frac{10}{9} + 3}{\frac{-9}{5} - 9}$$
$$B = \frac{\frac{10}{9} + \frac{3_{\times 9}}{1_{\times 9}}}{\frac{-9}{5} - \frac{9_{\times 5}}{1_{\times 5}}}$$
$$B = \frac{\frac{10}{9} + \frac{27}{9}}{\frac{-9}{5} - \frac{45}{5}}$$
$$B = \frac{37}{9} \div \frac{-54}{5}$$
$$B = \frac{37}{9} \times \frac{-5}{54}$$
$$B = \frac{37}{-9 \times \cancel{-1}} \times \frac{5 \times \cancel{-1}}{54}$$
$$\boxed{B = \frac{-185}{486}}$$

$$C = \frac{10}{7} \div \left(\frac{-6}{13} + \frac{9}{5}\right)$$
$$C = \frac{10}{7} \div \left(\frac{-6_{\times 5}}{13_{\times 5}} + \frac{9_{\times 13}}{5_{\times 13}}\right)$$
$$C = \frac{10}{7} \div \left(\frac{-30}{65} + \frac{117}{65}\right)$$
$$C = \frac{10}{7} \div \frac{87}{65}$$
$$C = \frac{10}{7} \times \frac{65}{87}$$
$$C =$$
$$\boxed{C = \frac{650}{609}}$$

Corrigé de l'exercice 2

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

$$A = \frac{10}{7} \times \left(\frac{-4}{7} + \frac{11}{12}\right)$$
$$A = \frac{10}{7} \times \left(\frac{-4_{\times 12}}{7_{\times 12}} + \frac{11_{\times 7}}{12_{\times 7}}\right)$$
$$A = \frac{10}{7} \times \left(\frac{-48}{84} + \frac{77}{84}\right)$$
$$A = \frac{10}{7} \times \frac{29}{84}$$
$$A = \frac{5 \times \cancel{2}}{7} \times \frac{29}{42 \times \cancel{2}}$$
$$\boxed{A = \frac{145}{294}}$$

$$B = \frac{-81}{13} - \frac{81}{65} \div \frac{-9}{52}$$
$$B = \frac{-81}{13} - \frac{81}{65} \times \frac{-52}{9}$$
$$B = \frac{-81}{13} - \frac{9 \times \cancel{9}}{-5 \times \cancel{-13}} \times \frac{4 \times \cancel{-13}}{1 \times \cancel{9}}$$
$$B = \frac{-81}{13} - \frac{-36}{5}$$
$$B = \frac{-81_{\times 5}}{13_{\times 5}} - \frac{-36_{\times 13}}{5_{\times 13}}$$
$$B = \frac{-405}{65} - \frac{-468}{65}$$
$$\boxed{B = \frac{63}{65}}$$

$$C = \frac{\frac{-8}{7} - 4}{\frac{8}{9} - 5}$$
$$C = \frac{\frac{-8}{7} - \frac{4_{\times 7}}{1_{\times 7}}}{\frac{8}{9} - \frac{5_{\times 9}}{1_{\times 9}}}$$
$$C = \frac{\frac{-8}{7} - \frac{28}{7}}{\frac{8}{9} - \frac{45}{9}}$$
$$C = \frac{-36}{7} \div \frac{-37}{9}$$
$$C = \frac{-36}{7} \times \frac{-9}{37}$$
$$C = \frac{-36}{-7 \times \cancel{-1}} \times \frac{9 \times \cancel{-1}}{37}$$
$$\boxed{C = \frac{324}{259}}$$

Corrigé de l'exercice 3

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

$$A = \frac{24}{5} + \frac{-6}{5} \div \frac{1}{5}$$
$$A = \frac{24}{5} + \frac{-6}{5} \times 5$$
$$A = \frac{24}{5} + \frac{-6}{1 \times \cancel{5}} \times \frac{1 \times \cancel{5}}{1}$$
$$A = \frac{24}{5} + -6$$
$$A = \frac{24}{5} + \frac{-6_{\times 5}}{1_{\times 5}}$$
$$A = \frac{24}{5} + \frac{-30}{5}$$
$$\boxed{A = \frac{-6}{5}}$$

$$B = \frac{-1}{2} \div \left(\frac{5}{2} + \frac{4}{9}\right)$$
$$B = \frac{-1}{2} \div \left(\frac{5_{\times 9}}{2_{\times 9}} + \frac{4_{\times 2}}{9_{\times 2}}\right)$$
$$B = \frac{-1}{2} \div \left(\frac{45}{18} + \frac{8}{18}\right)$$
$$B = \frac{-1}{2} \div \frac{53}{18}$$
$$B = \frac{-1}{2} \times \frac{18}{53}$$
$$B = \frac{-1}{1 \times \cancel{2}} \times \frac{9 \times \cancel{2}}{53}$$
$$\boxed{B = \frac{-9}{53}}$$

$$C = \frac{\frac{2}{3} - 4}{\frac{-8}{7} - 2}$$
$$C = \frac{\frac{2}{3} - \frac{4_{\times 3}}{1_{\times 3}}}{\frac{-8}{7} - \frac{2_{\times 7}}{1_{\times 7}}}$$
$$C = \frac{\frac{2}{3} - \frac{12}{3}}{\frac{-8}{7} - \frac{14}{7}}$$
$$C = \frac{-10}{3} \div \frac{-22}{7}$$
$$C = \frac{-10}{3} \times \frac{-7}{22}$$
$$C = \frac{-5 \times \cancel{2}}{-3 \times \cancel{-1}} \times \frac{7 \times \cancel{-1}}{11 \times \cancel{2}}$$
$$\boxed{C = \frac{35}{33}}$$

Corrigé de l'exercice 4

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

$$A = \frac{-6}{7} \div \left(\frac{5}{3} - \frac{1}{7}\right)$$
$$A = \frac{-6}{7} \div \left(\frac{5_{\times 7}}{3_{\times 7}} - \frac{1_{\times 3}}{7_{\times 3}}\right)$$
$$A = \frac{-6}{7} \div \left(\frac{35}{21} - \frac{3}{21}\right)$$
$$A = \frac{-6}{7} \div \frac{32}{21}$$
$$A = \frac{-6}{7} \times \frac{21}{32}$$
$$A = \frac{-3 \times \cancel{2}}{1 \times \cancel{7}} \times \frac{3 \times \cancel{7}}{16 \times \cancel{2}}$$
$$\boxed{A = \frac{-9}{16}}$$

$$B = \frac{\frac{7}{10} + 8}{\frac{4}{3} - 3}$$
$$B = \frac{\frac{7}{10} + \frac{8_{\times 10}}{1_{\times 10}}}{\frac{4}{3} - \frac{3_{\times 3}}{1_{\times 3}}}$$
$$B = \frac{\frac{7}{10} + \frac{80}{10}}{\frac{4}{3} - \frac{9}{3}}$$
$$B = \frac{87}{10} \div \frac{-5}{3}$$
$$B = \frac{87}{10} \times \frac{-3}{5}$$
$$B = \frac{87}{-10 \times \cancel{-1}} \times \frac{3 \times \cancel{-1}}{5}$$
$$\boxed{B = \frac{-261}{50}}$$

$$C = \frac{-77}{9} + \frac{55}{72} \div \frac{110}{81}$$
$$C = \frac{-77}{9} + \frac{55}{72} \times \frac{81}{110}$$
$$C = \frac{-77}{9} + \frac{1 \times \cancel{55}}{8 \times \cancel{9}} \times \frac{9 \times \cancel{9}}{2 \times \cancel{55}}$$
$$C = \frac{-77}{9} + \frac{9}{16}$$
$$C = \frac{-77_{\times 16}}{9_{\times 16}} + \frac{9_{\times 9}}{16_{\times 9}}$$
$$C = \frac{-1232}{144} + \frac{81}{144}$$
$$\boxed{C = \frac{-1\ 151}{144}}$$

Corrigé de l'exercice 5

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

$$A = \frac{\frac{2}{3}+10}{\frac{-7}{9}+8}$$

$$A = \frac{\frac{2}{3}+\frac{10\times3}{1\times3}}{\frac{-7}{9}+\frac{8\times9}{1\times9}}$$

$$A = \frac{\frac{2}{3}+\frac{30}{3}}{\frac{-7}{9}+\frac{72}{9}}$$

$$A = \frac{32}{3} \div \frac{65}{9}$$

$$A = \frac{32}{3} \times \frac{9}{65}$$

$$A = \frac{32}{1\times\cancel{3}} \times \frac{3\times\cancel{3}}{65}$$

$$\boxed{A = \frac{96}{65}}$$

$$B = \frac{-14}{5} - \frac{-7}{20} \times \frac{-100}{63}$$

$$B = \frac{-14}{5} - \frac{-1\times\cancel{7}}{-1\times\cancel{-20}} \times \frac{5\times\cancel{-20}}{9\times\cancel{7}}$$

$$B = \frac{-14}{5} - \frac{5}{9}$$

$$B = \frac{-14\times9}{5\times9} - \frac{5\times5}{9\times5}$$

$$B = \frac{-126}{45} - \frac{25}{45}$$

$$\boxed{B = \frac{-151}{45}}$$

$$C = \frac{-7}{2} \times \left(\frac{-9}{7} - \frac{-8}{5}\right)$$

$$C = \frac{-7}{2} \times \left(\frac{-9\times5}{7\times5} - \frac{-8\times7}{5\times7}\right)$$

$$C = \frac{-7}{2} \times \left(\frac{-45}{35} - \frac{-56}{35}\right)$$

$$C = \frac{-7}{2} \times \frac{11}{35}$$

$$C = \frac{-1\times\cancel{7}}{2} \times \frac{11}{5\times\cancel{7}}$$

$$\boxed{C = \frac{-11}{10}}$$

Corrigé de l'exercice 6

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

$$A = \frac{-4}{9} \div \left(\frac{9}{4} - \frac{11}{9}\right)$$

$$A = \frac{-4}{9} \div \left(\frac{9\times9}{4\times9} - \frac{11\times4}{9\times4}\right)$$

$$A = \frac{-4}{9} \div \left(\frac{81}{36} - \frac{44}{36}\right)$$

$$A = \frac{-4}{9} \div \frac{37}{36}$$

$$A = \frac{-4}{9} \times \frac{36}{37}$$

$$A = \frac{-4}{1\times\cancel{9}} \times \frac{4\times\cancel{9}}{37}$$

$$\boxed{A = \frac{-16}{37}}$$

$$B = \frac{25}{6} + \frac{-5}{12} \times \frac{3}{5}$$

$$B = \frac{25}{6} + \frac{-1\times\cancel{5}}{4\times\cancel{3}} \times \frac{1\times\cancel{3}}{1\times\cancel{5}}$$

$$B = \frac{25}{6} + \frac{-1}{4}$$

$$B = \frac{25\times2}{6\times2} + \frac{-1\times3}{4\times3}$$

$$B = \frac{50}{12} + \frac{-3}{12}$$

$$\boxed{B = \frac{47}{12}}$$

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

$$C = \frac{\frac{-5}{2}+\frac{2\times2}{1\times2}}{\frac{3}{4}+\frac{7\times4}{1\times4}}$$

$$C = \frac{\frac{-5}{2}+\frac{4}{2}}{\frac{3}{4}+\frac{28}{4}}$$

$$C = \frac{-1}{2} \div \frac{31}{4}$$

$$C = \frac{-1}{2} \times \frac{4}{31}$$

$$C = \frac{-1}{1\times\cancel{2}} \times \frac{2\times\cancel{2}}{31}$$

$$\boxed{C = \frac{-2}{31}}$$