Corrigé de l'exercice 1

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

$A = -18 + -1 \times \dfrac{-4}{9}$

$A = -18 + \dfrac{-1}{-1 \times \cancel{-1}} \times \dfrac{4 \times \cancel{-1}}{9}$

$A = -18 + \dfrac{4}{9}$

$A = \dfrac{-18_{\times 9}}{1_{\times 9}} + \dfrac{4}{9}$

$A = \dfrac{-162}{9} + \dfrac{4}{9}$

$\boxed{A = \dfrac{-158}{9}}$

$B = \dfrac{\dfrac{7}{10} + 3}{\dfrac{2}{7} - 5}$

$B = \dfrac{\dfrac{7}{10} + \dfrac{3_{\times 10}}{1_{\times 10}}}{\dfrac{2}{7} - \dfrac{5_{\times 7}}{1_{\times 7}}}$

$B = \dfrac{\dfrac{7}{10} + \dfrac{30}{10}}{\dfrac{2}{7} - \dfrac{35}{7}}$

$B = \dfrac{37}{10} \div \dfrac{-33}{7}$

$B = \dfrac{37}{10} \times \dfrac{-7}{33}$

$B = \dfrac{37}{-10 \times \cancel{-1}} \times \dfrac{7 \times \cancel{-1}}{33}$

$\boxed{B = \dfrac{-259}{330}}$

$C = \dfrac{5}{2} \times \left(\dfrac{-13}{12} + \dfrac{3}{11} \right)$

$C = \dfrac{5}{2} \times \left(\dfrac{-13_{\times 11}}{12_{\times 11}} + \dfrac{3_{\times 12}}{11_{\times 12}} \right)$

$C = \dfrac{5}{2} \times \left(\dfrac{-143}{132} + \dfrac{36}{132} \right)$

$C = \dfrac{5}{2} \times \dfrac{-107}{132}$

$C = \dfrac{5}{-2 \times \cancel{-1}} \times \dfrac{107 \times \cancel{-1}}{132}$

$\boxed{C = \dfrac{-535}{264}}$

Corrigé de l'exercice 2

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

$A = \dfrac{\dfrac{-3}{10} + 7}{\dfrac{10}{3} - 5}$

$A = \dfrac{\dfrac{-3}{10} + \dfrac{7_{\times 10}}{1_{\times 10}}}{\dfrac{10}{3} - \dfrac{5_{\times 3}}{1_{\times 3}}}$

$A = \dfrac{\dfrac{-3}{10} + \dfrac{70}{10}}{\dfrac{10}{3} - \dfrac{15}{3}}$

$A = \dfrac{67}{10} \div \dfrac{-5}{3}$

$A = \dfrac{67}{10} \times \dfrac{-3}{5}$

$A = \dfrac{67}{-10 \times \cancel{-1}} \times \dfrac{3 \times \cancel{-1}}{5}$

$\boxed{A = \dfrac{-201}{50}}$

$B = \dfrac{120}{13} - \dfrac{-15}{13} \times \dfrac{13}{6}$

$B = \dfrac{120}{13} - \dfrac{-5 \times \cancel{3}}{1 \times \cancel{13}} \times \dfrac{1 \times \cancel{13}}{2 \times \cancel{3}}$

$B = \dfrac{120}{13} - \dfrac{-5}{2}$

$B = \dfrac{120_{\times 2}}{13_{\times 2}} - \dfrac{-5_{\times 13}}{2_{\times 13}}$

$B = \dfrac{240}{26} - \dfrac{-65}{26}$

$\boxed{B = \dfrac{305}{26}}$

$C = \dfrac{9}{4} \times \left(\dfrac{6}{7} + \dfrac{-9}{4} \right)$

$C = \dfrac{9}{4} \times \left(\dfrac{6_{\times 4}}{7_{\times 4}} + \dfrac{-9_{\times 7}}{4_{\times 7}} \right)$

$C = \dfrac{9}{4} \times \left(\dfrac{24}{28} + \dfrac{-63}{28} \right)$

$C = \dfrac{9}{4} \times \dfrac{-39}{28}$

$C = \dfrac{9}{-4 \times \cancel{-1}} \times \dfrac{39 \times \cancel{-1}}{28}$

$\boxed{C = \dfrac{-351}{112}}$

Corrigé de l'exercice 3

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

$$A = \frac{-16}{13} - \frac{16}{65} \div \frac{64}{91}$$
$$A = \frac{-16}{13} - \frac{16}{65} \times \frac{91}{64}$$
$$A = \frac{-16}{13} - \frac{1 \times \cancel{16}}{5 \times \cancel{13}} \times \frac{7 \times \cancel{13}}{4 \times \cancel{16}}$$
$$A = \frac{-16}{13} - \frac{7}{20}$$
$$A = \frac{-16_{\times 20}}{13_{\times 20}} - \frac{7_{\times 13}}{20_{\times 13}}$$
$$A = \frac{-320}{260} - \frac{91}{260}$$
$$\boxed{A = \frac{-411}{260}}$$

$$B = \frac{\frac{-3}{8} - 2}{\frac{3}{4} + 2}$$
$$B = \frac{\frac{-3}{8} - \frac{2_{\times 8}}{1_{\times 8}}}{\frac{3}{4} + \frac{2_{\times 4}}{1_{\times 4}}}$$
$$B = \frac{\frac{-3}{8} - \frac{16}{8}}{\frac{3}{4} + \frac{8}{4}}$$
$$B = \frac{-19}{8} \div \frac{11}{4}$$
$$B = \frac{-19}{8} \times \frac{4}{11}$$
$$B = \frac{-19}{2 \times \cancel{4}} \times \frac{1 \times \cancel{4}}{11}$$
$$\boxed{B = \frac{-19}{22}}$$

$$C = \frac{-3}{4} \div \left(\frac{13}{10} - \frac{3}{11}\right)$$
$$C = \frac{-3}{4} \div \left(\frac{13_{\times 11}}{10_{\times 11}} - \frac{3_{\times 10}}{11_{\times 10}}\right)$$
$$C = \frac{-3}{4} \div \left(\frac{143}{110} - \frac{30}{110}\right)$$
$$C = \frac{-3}{4} \div \frac{113}{110}$$
$$C = \frac{-3}{4} \times \frac{110}{113}$$
$$C = \frac{-3}{2 \times \cancel{2}} \times \frac{55 \times \cancel{2}}{113}$$
$$\boxed{C = \frac{-165}{226}}$$

Corrigé de l'exercice 4

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

$$A = \frac{-21}{8} - \frac{35}{32} \times \frac{4}{3}$$
$$A = \frac{-21}{8} - \frac{35}{8 \times \cancel{4}} \times \frac{1 \times \cancel{4}}{3}$$
$$A = \frac{-21}{8} - \frac{35}{24}$$
$$A = \frac{-21_{\times 3}}{8_{\times 3}} - \frac{35}{24}$$
$$A = \frac{-63}{24} - \frac{35}{24}$$
$$A = \frac{-98}{24}$$
$$\boxed{A = \frac{-49}{12}}$$

$$B = \frac{\frac{4}{9} + 3}{\frac{-2}{7} - 3}$$
$$B = \frac{\frac{4}{9} + \frac{3_{\times 9}}{1_{\times 9}}}{\frac{-2}{7} - \frac{3_{\times 7}}{1_{\times 7}}}$$
$$B = \frac{\frac{4}{9} + \frac{27}{9}}{\frac{-2}{7} - \frac{21}{7}}$$
$$B = \frac{31}{9} \div \frac{-23}{7}$$
$$B = \frac{31}{9} \times \frac{-7}{23}$$
$$B = \frac{31}{-9 \times \cancel{-1}} \times \frac{7 \times \cancel{-1}}{23}$$
$$\boxed{B = \frac{-217}{207}}$$

$$C = \frac{4}{3} \times \left(\frac{-9}{7} + \frac{8}{9}\right)$$
$$C = \frac{4}{3} \times \left(\frac{-9_{\times 9}}{7_{\times 9}} + \frac{8_{\times 7}}{9_{\times 7}}\right)$$
$$C = \frac{4}{3} \times \left(\frac{-81}{63} + \frac{56}{63}\right)$$
$$C = \frac{4}{3} \times \frac{-25}{63}$$
$$C = \frac{4}{-3 \times \cancel{-1}} \times \frac{25 \times \cancel{-1}}{63}$$
$$\boxed{C = \frac{-100}{189}}$$

Corrigé de l'exercice 5

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

$$A = \frac{5}{4} \times \left(\frac{4}{5} + \frac{1}{9}\right)$$
$$A = \frac{5}{4} \times \left(\frac{4_{\times 9}}{5_{\times 9}} + \frac{1_{\times 5}}{9_{\times 5}}\right)$$
$$A = \frac{5}{4} \times \left(\frac{36}{45} + \frac{5}{45}\right)$$
$$A = \frac{5}{4} \times \frac{41}{45}$$
$$A = \frac{1 \times \cancel{5}}{4} \times \frac{41}{9 \times \cancel{5}}$$
$$\boxed{A = \frac{41}{36}}$$

$$B = \frac{70}{9} - \frac{14}{45} \times \frac{10}{7}$$
$$B = \frac{70}{9} - \frac{2 \times \cancel{7}}{9 \times \cancel{5}} \times \frac{2 \times \cancel{5}}{1 \times \cancel{7}}$$
$$B = \frac{70}{9} - \frac{4}{9}$$
$$B =$$
$$B = \frac{70}{9} - \frac{4}{9}$$
$$B = \frac{66}{9}$$
$$\boxed{B = \frac{22}{3}}$$

$$C = \frac{\frac{-3}{7} - 7}{\frac{5}{3} - 1}$$
$$C = \frac{\frac{-3}{7} - \frac{7_{\times 7}}{1_{\times 7}}}{\frac{5}{3} - \frac{1_{\times 3}}{1_{\times 3}}}$$
$$C = \frac{\frac{-3}{7} - \frac{49}{7}}{\frac{5}{3} - \frac{3}{3}}$$
$$C = \frac{-52}{7} \div \frac{2}{3}$$
$$C = \frac{-52}{7} \times \frac{3}{2}$$
$$C = \frac{-26 \times \cancel{2}}{7} \times \frac{3}{1 \times \cancel{2}}$$
$$\boxed{C = \frac{-78}{7}}$$

Corrigé de l'exercice 6

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

$$A = \frac{-7}{9} + \frac{7}{9} \div \frac{-49}{45}$$
$$A = \frac{-7}{9} + \frac{7}{9} \times \frac{-45}{49}$$
$$A = \frac{-7}{9} + \frac{1 \times \cancel{7}}{-1 \times \cancel{9}} \times \frac{5 \times \cancel{9}}{7 \times \cancel{7}}$$
$$A = \frac{-7}{9} + \frac{-5}{7}$$
$$A = \frac{-7_{\times 7}}{9_{\times 7}} + \frac{-5_{\times 9}}{7_{\times 9}}$$
$$A = \frac{-49}{63} + \frac{-45}{63}$$
$$\boxed{A = \frac{-94}{63}}$$

$$B = \frac{-1}{7} \times \left(\frac{8}{3} + \frac{7}{4}\right)$$
$$B = \frac{-1}{7} \times \left(\frac{8_{\times 4}}{3_{\times 4}} + \frac{7_{\times 3}}{4_{\times 3}}\right)$$
$$B = \frac{-1}{7} \times \left(\frac{32}{12} + \frac{21}{12}\right)$$
$$B = \frac{-1}{7} \times \frac{53}{12}$$
$$B =$$
$$\boxed{B = \frac{-53}{84}}$$

$$C = \frac{\frac{-3}{2} - 2}{\frac{4}{7} + 7}$$
$$C = \frac{\frac{-3}{2} - \frac{2_{\times 2}}{1_{\times 2}}}{\frac{4}{7} + \frac{7_{\times 7}}{1_{\times 7}}}$$
$$C = \frac{\frac{-3}{2} - \frac{4}{2}}{\frac{4}{7} + \frac{49}{7}}$$
$$C = \frac{-7}{2} \div \frac{53}{7}$$
$$C = \frac{-7}{2} \times \frac{7}{53}$$
$$C =$$
$$\boxed{C = \frac{-49}{106}}$$