Corrigé de l'exercice 1

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

$$A = \dfrac{\dfrac{-1}{4} - 5}{\dfrac{-1}{9} + 1}$$

$$A = \dfrac{\dfrac{-1}{4} - \dfrac{5_{\times 4}}{1_{\times 4}}}{\dfrac{-1}{9} + \dfrac{1_{\times 9}}{1_{\times 9}}}$$

$$A = \dfrac{\dfrac{-1}{4} - \dfrac{20}{4}}{\dfrac{-1}{9} + \dfrac{9}{9}}$$

$$A = \dfrac{-21}{4} \div \dfrac{8}{9}$$

$$A = \dfrac{-21}{4} \times \dfrac{9}{8}$$

$$A =$$

$$\boxed{A = \dfrac{-189}{32}}$$

$$B = \dfrac{8}{9} \times \left(\dfrac{1}{13} + \dfrac{13}{6} \right)$$

$$B = \dfrac{8}{9} \times \left(\dfrac{1_{\times 6}}{13_{\times 6}} + \dfrac{13_{\times 13}}{6_{\times 13}} \right)$$

$$B = \dfrac{8}{9} \times \left(\dfrac{6}{78} + \dfrac{169}{78} \right)$$

$$B = \dfrac{8}{9} \times \dfrac{175}{78}$$

$$B = \dfrac{4 \times \cancel{2}}{9} \times \dfrac{175}{39 \times \cancel{2}}$$

$$\boxed{B = \dfrac{700}{351}}$$

$$C = 27 - -1 \times \dfrac{5}{3}$$

$$C = 27 - \dfrac{-5}{3}$$

$$C = \dfrac{27_{\times 3}}{1_{\times 3}} - \dfrac{-5}{3}$$

$$C = \dfrac{81}{3} - \dfrac{-5}{3}$$

$$\boxed{C = \dfrac{86}{3}}$$

Corrigé de l'exercice 2

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

$$A = \dfrac{-33}{2} + \dfrac{-11}{6} \times \dfrac{27}{77}$$

$$A = \dfrac{-33}{2} + \dfrac{-1 \times \cancel{11}}{2 \times \cancel{3}} \times \dfrac{9 \times \cancel{3}}{7 \times \cancel{11}}$$

$$A = \dfrac{-33}{2} + \dfrac{-9}{14}$$

$$A = \dfrac{-33_{\times 7}}{2_{\times 7}} + \dfrac{-9}{14}$$

$$A = \dfrac{-231}{14} + \dfrac{-9}{14}$$

$$A = \dfrac{-240}{14}$$

$$\boxed{A = \dfrac{-120}{7}}$$

$$B = \dfrac{-1}{2} \div \left(\dfrac{7}{4} - \dfrac{13}{3} \right)$$

$$B = \dfrac{-1}{2} \div \left(\dfrac{7_{\times 3}}{4_{\times 3}} - \dfrac{13_{\times 4}}{3_{\times 4}} \right)$$

$$B = \dfrac{-1}{2} \div \left(\dfrac{21}{12} - \dfrac{52}{12} \right)$$

$$B = \dfrac{-1}{2} \div \dfrac{-31}{12}$$

$$B = \dfrac{-1}{2} \times \dfrac{-12}{31}$$

$$B = \dfrac{-1}{-1 \times \cancel{2}} \times \dfrac{6 \times \cancel{2}}{31}$$

$$\boxed{B = \dfrac{6}{31}}$$

$$C = \dfrac{\dfrac{7}{10} + 3}{\dfrac{3}{5} + 5}$$

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

$$C = \dfrac{\dfrac{7}{10} + \dfrac{30}{10}}{\dfrac{3}{5} + \dfrac{25}{5}}$$

$$C = \dfrac{37}{10} \div \dfrac{28}{5}$$

$$C = \dfrac{37}{10} \times \dfrac{5}{28}$$

$$C = \dfrac{37}{2 \times \cancel{5}} \times \dfrac{1 \times \cancel{5}}{28}$$

$$\boxed{C = \dfrac{37}{56}}$$

Corrigé de l'exercice 3

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

$$A = \frac{\frac{6}{7} - 3}{\frac{-7}{4} - 1}$$

$$A = \frac{\frac{6}{7} - \frac{3_{\times 7}}{1_{\times 7}}}{\frac{-7}{4} - \frac{1_{\times 4}}{1_{\times 4}}}$$

$$A = \frac{\frac{6}{7} - \frac{21}{7}}{\frac{-7}{4} - \frac{4}{4}}$$

$$A = \frac{-15}{7} \div \frac{-11}{4}$$

$$A = \frac{-15}{7} \times \frac{-4}{11}$$

$$A = \frac{-15}{-7 \times \diagup 1} \times \frac{4 \times \diagup 1}{11}$$

$$\boxed{A = \frac{60}{77}}$$

$$B = -12 + \frac{-6}{5} \times \frac{3}{14}$$

$$B = -12 + \frac{-3 \times \diagup 2}{5} \times \frac{3}{7 \times \diagup 2}$$

$$B = -12 + \frac{-9}{35}$$

$$B = \frac{-12_{\times 35}}{1_{\times 35}} + \frac{-9}{35}$$

$$B = \frac{-420}{35} + \frac{-9}{35}$$

$$\boxed{B = \frac{-429}{35}}$$

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

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

$$C = \frac{-2}{5} \times \left(\frac{63}{56} + \frac{64}{56} \right)$$

$$C = \frac{-2}{5} \times \frac{127}{56}$$

$$C = \frac{-1 \times \diagup 2}{5} \times \frac{127}{28 \times \diagup 2}$$

$$\boxed{C = \frac{-127}{140}}$$

Corrigé de l'exercice 4

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

$$A = \frac{-2}{7} \times \left(\frac{1}{6} - \frac{-8}{7} \right)$$

$$A = \frac{-2}{7} \times \left(\frac{1_{\times 7}}{6_{\times 7}} - \frac{-8_{\times 6}}{7_{\times 6}} \right)$$

$$A = \frac{-2}{7} \times \left(\frac{7}{42} - \frac{-48}{42} \right)$$

$$A = \frac{-2}{7} \times \frac{55}{42}$$

$$A = \frac{-1 \times \diagup 2}{7} \times \frac{55}{21 \times \diagup 2}$$

$$\boxed{A = \frac{-55}{147}}$$

$$B = -4 - \frac{-12}{35} \times 1$$

$$B = -4 - \frac{-12}{35}$$

$$B = \frac{-4_{\times 35}}{1_{\times 35}} - \frac{-12}{35}$$

$$B = \frac{-140}{35} - \frac{-12}{35}$$

$$\boxed{B = \frac{-128}{35}}$$

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

$$C = \frac{\frac{3}{5} + \frac{1_{\times 5}}{1_{\times 5}}}{\frac{-3}{2} - \frac{7_{\times 2}}{1_{\times 2}}}$$

$$C = \frac{\frac{3}{5} + \frac{5}{5}}{\frac{-3}{2} - \frac{14}{2}}$$

$$C = \frac{8}{5} \div \frac{-17}{2}$$

$$C = \frac{8}{5} \times \frac{-2}{17}$$

$$C = \frac{8}{-5 \times \diagup 1} \times \frac{2 \times \diagup 1}{17}$$

$$\boxed{C = \frac{-16}{85}}$$

Corrigé de l'exercice 5

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

$$A = -54 - \frac{-9}{4} \times \frac{-1}{3}$$

$$A = -54 - \frac{-3 \times \cancel{3}}{-4 \times \cancel{-1}} \times \frac{1 \times \cancel{-1}}{1 \times \cancel{3}}$$

$$A = -54 - \frac{3}{4}$$

$$A = \frac{-54_{\times 4}}{1_{\times 4}} - \frac{3}{4}$$

$$A = \frac{-216}{4} - \frac{3}{4}$$

$$\boxed{A = \frac{-219}{4}}$$

$$B = \frac{\dfrac{-5}{4} + 8}{\dfrac{-1}{4} - 8}$$

$$B = \frac{\dfrac{-5}{4} + \dfrac{8_{\times 4}}{1_{\times 4}}}{\dfrac{-1}{4} - \dfrac{8_{\times 4}}{1_{\times 4}}}$$

$$B = \frac{\dfrac{-5}{4} + \dfrac{32}{4}}{\dfrac{-1}{4} - \dfrac{32}{4}}$$

$$B = \frac{27}{4} \div \frac{-33}{4}$$

$$B = \frac{27}{4} \times \frac{-4}{33}$$

$$B = \frac{9 \times \cancel{3}}{-1 \times \cancel{-4}} \times \frac{1 \times \cancel{-4}}{11 \times \cancel{3}}$$

$$\boxed{B = \frac{-9}{11}}$$

$$C = \frac{2}{5} \div \left(\frac{13}{2} + \frac{-12}{5} \right)$$

$$C = \frac{2}{5} \div \left(\frac{13_{\times 5}}{2_{\times 5}} + \frac{-12_{\times 2}}{5_{\times 2}} \right)$$

$$C = \frac{2}{5} \div \left(\frac{65}{10} + \frac{-24}{10} \right)$$

$$C = \frac{2}{5} \div \frac{41}{10}$$

$$C = \frac{2}{5} \times \frac{10}{41}$$

$$C = \frac{2}{1 \times \cancel{5}} \times \frac{2 \times \cancel{5}}{41}$$

$$\boxed{C = \frac{4}{41}}$$

Corrigé de l'exercice 6

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

$$A = \frac{52}{3} - \frac{13}{12} \times \frac{7}{13}$$

$$A = \frac{52}{3} - \frac{1 \times \cancel{13}}{12} \times \frac{7}{1 \times \cancel{13}}$$

$$A = \frac{52}{3} - \frac{7}{12}$$

$$A = \frac{52_{\times 4}}{3_{\times 4}} - \frac{7}{12}$$

$$A = \frac{208}{12} - \frac{7}{12}$$

$$A = \frac{201}{12}$$

$$\boxed{A = \frac{67}{4}}$$

$$B = \frac{\dfrac{-4}{5} + 4}{\dfrac{2}{7} - 6}$$

$$B = \frac{\dfrac{-4}{5} + \dfrac{4_{\times 5}}{1_{\times 5}}}{\dfrac{2}{7} - \dfrac{6_{\times 7}}{1_{\times 7}}}$$

$$B = \frac{\dfrac{-4}{5} + \dfrac{20}{5}}{\dfrac{2}{7} - \dfrac{42}{7}}$$

$$B = \frac{16}{5} \div \frac{-40}{7}$$

$$B = \frac{16}{5} \times \frac{-7}{40}$$

$$B = \frac{2 \times \cancel{8}}{-5 \times \cancel{-1}} \times \frac{7 \times \cancel{-1}}{5 \times \cancel{8}}$$

$$\boxed{B = \frac{-14}{25}}$$

$$C = \frac{-7}{5} \times \left(\frac{4}{13} + \frac{13}{10} \right)$$

$$C = \frac{-7}{5} \times \left(\frac{4_{\times 10}}{13_{\times 10}} + \frac{13_{\times 13}}{10_{\times 13}} \right)$$

$$C = \frac{-7}{5} \times \left(\frac{40}{130} + \frac{169}{130} \right)$$

$$C = \frac{-7}{5} \times \frac{209}{130}$$

$$C =$$

$$\boxed{C = \frac{-1\,463}{650}}$$