Corrigé de l'exercice 1

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

$$A = \frac{-2}{7} \times \left(\frac{-11}{13} - \frac{6}{5} \right)$$
$$A = \frac{-2}{7} \times \left(\frac{-11_{\times 5}}{13_{\times 5}} - \frac{6_{\times 13}}{5_{\times 13}} \right)$$
$$A = \frac{-2}{7} \times \left(\frac{-55}{65} - \frac{78}{65} \right)$$
$$A = \frac{-2}{7} \times \frac{-133}{65}$$
$$A = \frac{-2}{-1 \times \cancel{7}} \times \frac{19 \times \cancel{7}}{65}$$
$$\boxed{A = \frac{38}{65}}$$

$$B = \frac{5}{4} + \frac{1}{20} \times 3$$
$$B = \frac{5}{4} + \frac{3}{20}$$
$$B = \frac{5_{\times 5}}{4_{\times 5}} + \frac{3}{20}$$
$$B = \frac{25}{20} + \frac{3}{20}$$
$$B = \frac{28}{20}$$
$$\boxed{B = \frac{7}{5}}$$

$$C = \frac{\frac{-7}{3} + 2}{\frac{9}{8} - 5}$$
$$C = \frac{\frac{-7}{3} + \frac{2_{\times 3}}{1_{\times 3}}}{\frac{9}{8} - \frac{5_{\times 8}}{1_{\times 8}}}$$
$$C = \frac{\frac{-7}{3} + \frac{6}{3}}{\frac{9}{8} - \frac{40}{8}}$$
$$C = \frac{-1}{3} \div \frac{-31}{8}$$
$$C = \frac{-1}{3} \times \frac{-8}{31}$$
$$C = \frac{-1}{-3 \times \cancel{-1}} \times \frac{8 \times \cancel{-1}}{31}$$
$$\boxed{C = \frac{8}{93}}$$

Corrigé de l'exercice 2

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

$$A = \frac{-3}{2} - \frac{3}{4} \times 4$$
$$A = \frac{-3}{2} - \frac{3}{1 \times \cancel{4}} \times \frac{1 \times \cancel{4}}{1}$$
$$A = \frac{-3}{2} - 3$$
$$A = \frac{-3}{2} - \frac{3_{\times 2}}{1_{\times 2}}$$
$$A = \frac{-3}{2} - \frac{6}{2}$$
$$\boxed{A = \frac{-9}{2}}$$

$$B = \frac{-2}{7} \times \left(\frac{11}{6} - \frac{1}{5} \right)$$
$$B = \frac{-2}{7} \times \left(\frac{11_{\times 5}}{6_{\times 5}} - \frac{1_{\times 6}}{5_{\times 6}} \right)$$
$$B = \frac{-2}{7} \times \left(\frac{55}{30} - \frac{6}{30} \right)$$
$$B = \frac{-2}{7} \times \frac{49}{30}$$
$$B = \frac{-1 \times \cancel{2}}{1 \times \cancel{7}} \times \frac{7 \times \cancel{7}}{15 \times \cancel{2}}$$
$$\boxed{B = \frac{-7}{15}}$$

$$C = \frac{\frac{5}{3} - 7}{\frac{7}{5} - 8}$$
$$C = \frac{\frac{5}{3} - \frac{7_{\times 3}}{1_{\times 3}}}{\frac{7}{5} - \frac{8_{\times 5}}{1_{\times 5}}}$$
$$C = \frac{\frac{5}{3} - \frac{21}{3}}{\frac{7}{5} - \frac{40}{5}}$$
$$C = \frac{-16}{3} \div \frac{-33}{5}$$
$$C = \frac{-16}{3} \times \frac{-5}{33}$$
$$C = \frac{-16}{-3 \times \cancel{-1}} \times \frac{5 \times \cancel{-1}}{33}$$
$$\boxed{C = \frac{80}{99}}$$

Corrigé de l'exercice 3

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

$$A = \frac{-9}{2} \times \left(\frac{-8}{3} - \frac{-4}{5} \right)$$

$$A = \frac{-9}{2} \times \left(\frac{-8_{\times 5}}{3_{\times 5}} - \frac{-4_{\times 3}}{5_{\times 3}} \right)$$

$$A = \frac{-9}{2} \times \left(\frac{-40}{15} - \frac{-12}{15} \right)$$

$$A = \frac{-9}{2} \times \frac{-28}{15}$$

$$A = \frac{-3 \times \cancel{3}}{-1 \times \cancel{-2}} \times \frac{14 \times \cancel{-2}}{5 \times \cancel{3}}$$

$$\boxed{A = \frac{42}{5}}$$

$$B = \frac{\frac{-1}{3} + 6}{\frac{-4}{3} - 10}$$

$$B = \frac{\frac{-1}{3} + \frac{6_{\times 3}}{1_{\times 3}}}{\frac{-4}{3} - \frac{10_{\times 3}}{1_{\times 3}}}$$

$$B = \frac{\frac{-1}{3} + \frac{18}{3}}{\frac{-4}{3} - \frac{30}{3}}$$

$$B = \frac{17}{3} \div \frac{-34}{3}$$

$$B = \frac{17}{3} \times \frac{-3}{34}$$

$$B = \frac{1 \times \cancel{17}}{-1 \times \cancel{-3}} \times \frac{1 \times \cancel{-3}}{2 \times \cancel{17}}$$

$$\boxed{B = \frac{-1}{2}}$$

$$C = \frac{-48}{11} + \frac{16}{33} \div \frac{-8}{11}$$

$$C = \frac{-48}{11} + \frac{16}{33} \times \frac{-11}{8}$$

$$C = \frac{-48}{11} + \frac{2 \times \cancel{8}}{-3 \times \cancel{-11}} \times \frac{1 \times \cancel{-11}}{1 \times \cancel{8}}$$

$$C = \frac{-48}{11} + \frac{-2}{3}$$

$$C = \frac{-48_{\times 3}}{11_{\times 3}} + \frac{-2_{\times 11}}{3_{\times 11}}$$

$$C = \frac{-144}{33} + \frac{-22}{33}$$

$$\boxed{C = \frac{-166}{33}}$$

Corrigé de l'exercice 4

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

$$A = \frac{\frac{-10}{9} - 10}{\frac{-1}{2} - 6}$$

$$A = \frac{\frac{-10}{9} - \frac{10_{\times 9}}{1_{\times 9}}}{\frac{-1}{2} - \frac{6_{\times 2}}{1_{\times 2}}}$$

$$A = \frac{\frac{-10}{9} - \frac{90}{9}}{\frac{-1}{2} - \frac{12}{2}}$$

$$A = \frac{-100}{9} \div \frac{-13}{2}$$

$$A = \frac{-100}{9} \times \frac{-2}{13}$$

$$A = \frac{-100}{-9 \times \cancel{-1}} \times \frac{2 \times \cancel{-1}}{13}$$

$$\boxed{A = \frac{200}{117}}$$

$$B = \frac{-24}{5} + \frac{-42}{25} \div 6$$

$$B = \frac{-24}{5} + \frac{-42}{25} \times \frac{1}{6}$$

$$B = \frac{-24}{5} + \frac{-7 \times \cancel{6}}{25} \times \frac{1}{1 \times \cancel{6}}$$

$$B = \frac{-24}{5} + \frac{-7}{25}$$

$$B = \frac{-24_{\times 5}}{5_{\times 5}} + \frac{-7}{25}$$

$$B = \frac{-120}{25} + \frac{-7}{25}$$

$$\boxed{B = \frac{-127}{25}}$$

$$C = \frac{-5}{2} \times \left(\frac{-9}{13} - \frac{1}{10} \right)$$

$$C = \frac{-5}{2} \times \left(\frac{-9_{\times 10}}{13_{\times 10}} - \frac{1_{\times 13}}{10_{\times 13}} \right)$$

$$C = \frac{-5}{2} \times \left(\frac{-90}{130} - \frac{13}{130} \right)$$

$$C = \frac{-5}{2} \times \frac{-103}{130}$$

$$C = \frac{-1 \times \cancel{5}}{-2 \times \cancel{-1}} \times \frac{103 \times \cancel{-1}}{26 \times \cancel{5}}$$

$$\boxed{C = \frac{103}{52}}$$

Corrigé de l'exercice 5

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

$$A = \frac{-39}{2} - \frac{13}{6} \times \frac{-7}{65}$$
$$A = \frac{-39}{2} - \frac{1 \times \cancel{13}}{-6 \times \cancel{-1}} \times \frac{7 \times \cancel{-1}}{5 \times \cancel{13}}$$
$$A = \frac{-39}{2} - \frac{-7}{30}$$
$$A = \frac{-39_{\times 15}}{2_{\times 15}} - \frac{-7}{30}$$
$$A = \frac{-585}{30} - \frac{-7}{30}$$
$$A = \frac{-578}{30}$$
$$\boxed{A = \frac{-289}{15}}$$

$$B = \frac{3}{4} \times \left(\frac{-3}{8} - \frac{11}{3}\right)$$
$$B = \frac{3}{4} \times \left(\frac{-3_{\times 3}}{8_{\times 3}} - \frac{11_{\times 8}}{3_{\times 8}}\right)$$
$$B = \frac{3}{4} \times \left(\frac{-9}{24} - \frac{88}{24}\right)$$
$$B = \frac{3}{4} \times \frac{-97}{24}$$
$$B = \frac{1 \times \cancel{3}}{-4 \times \cancel{-1}} \times \frac{97 \times \cancel{-1}}{8 \times \cancel{3}}$$
$$\boxed{B = \frac{-97}{32}}$$

$$C = \frac{\frac{-9}{5} - 5}{\frac{-9}{8} - 9}$$
$$C = \frac{\frac{-9}{5} - \frac{5_{\times 5}}{1_{\times 5}}}{\frac{-9}{8} - \frac{9_{\times 8}}{1_{\times 8}}}$$
$$C = \frac{\frac{-9}{5} - \frac{25}{5}}{\frac{-9}{8} - \frac{72}{8}}$$
$$C = \frac{-34}{5} \div \frac{-81}{8}$$
$$C = \frac{-34}{5} \times \frac{-8}{81}$$
$$C = \frac{-34}{-5 \times \cancel{-1}} \times \frac{8 \times \cancel{-1}}{81}$$
$$\boxed{C = \frac{272}{405}}$$

Corrigé de l'exercice 6

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

$$A = \frac{\frac{-5}{7} - 3}{\frac{2}{5} - 4}$$
$$A = \frac{\frac{-5}{7} - \frac{3_{\times 7}}{1_{\times 7}}}{\frac{2}{5} - \frac{4_{\times 5}}{1_{\times 5}}}$$
$$A = \frac{\frac{-5}{7} - \frac{21}{7}}{\frac{2}{5} - \frac{20}{5}}$$
$$A = \frac{-26}{7} \div \frac{-18}{5}$$
$$A = \frac{-26}{7} \times \frac{-5}{18}$$
$$A = \frac{-13 \times \cancel{2}}{-7 \times \cancel{-1}} \times \frac{5 \times \cancel{-1}}{9 \times \cancel{2}}$$
$$\boxed{A = \frac{65}{63}}$$

$$B = \frac{-3}{7} \times \left(\frac{7}{3} + \frac{-5}{4}\right)$$
$$B = \frac{-3}{7} \times \left(\frac{7_{\times 4}}{3_{\times 4}} + \frac{-5_{\times 3}}{4_{\times 3}}\right)$$
$$B = \frac{-3}{7} \times \left(\frac{28}{12} + \frac{-15}{12}\right)$$
$$B = \frac{-3}{7} \times \frac{13}{12}$$
$$B = \frac{-1 \times \cancel{3}}{7} \times \frac{13}{4 \times \cancel{3}}$$
$$\boxed{B = \frac{-13}{28}}$$

$$C = \frac{40}{11} + \frac{10}{11} \div \frac{-35}{33}$$
$$C = \frac{40}{11} + \frac{10}{11} \times \frac{-33}{35}$$
$$C = \frac{40}{11} + \frac{2 \times \cancel{5}}{-1 \times \cancel{-11}} \times \frac{3 \times \cancel{-11}}{7 \times \cancel{5}}$$
$$C = \frac{40}{11} + \frac{-6}{7}$$
$$C = \frac{40_{\times 7}}{11_{\times 7}} + \frac{-6_{\times 11}}{7_{\times 11}}$$
$$C = \frac{280}{77} + \frac{-66}{77}$$
$$\boxed{C = \frac{214}{77}}$$