Corrigé de l'exercice 1

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

$$A = \frac{\frac{-1}{2}+8}{\frac{-2}{3}+9}$$
$$A = \frac{\frac{-1}{2}+\frac{8_{\times 2}}{1_{\times 2}}}{\frac{-2}{3}+\frac{9_{\times 3}}{1_{\times 3}}}$$
$$A = \frac{\frac{-1}{2}+\frac{16}{2}}{\frac{-2}{3}+\frac{27}{3}}$$
$$A = \frac{15}{2} \div \frac{25}{3}$$
$$A = \frac{15}{2} \times \frac{3}{25}$$
$$A = \frac{3 \times \cancel{5}}{2} \times \frac{3}{5 \times \cancel{5}}$$
$$\boxed{A = \frac{9}{10}}$$

$$B = -8 + \frac{16}{21} \div \frac{-20}{7}$$
$$B = -8 + \frac{16}{21} \times \frac{-7}{20}$$
$$B = -8 + \frac{4 \times \cancel{4}}{-3 \times \cancel{-7}} \times \frac{1 \times \cancel{-7}}{5 \times \cancel{4}}$$
$$B = -8 + \frac{-4}{15}$$
$$B = \frac{-8_{\times 15}}{1_{\times 15}} + \frac{-4}{15}$$
$$B = \frac{-120}{15} + \frac{-4}{15}$$
$$\boxed{B = \frac{-124}{15}}$$

$$C = \frac{-1}{2} \div \left(\frac{-1}{10} - \frac{-1}{7}\right)$$
$$C = \frac{-1}{2} \div \left(\frac{-1_{\times 7}}{10_{\times 7}} - \frac{-1_{\times 10}}{7_{\times 10}}\right)$$
$$C = \frac{-1}{2} \div \left(\frac{-7}{70} - \frac{-10}{70}\right)$$
$$C = \frac{-1}{2} \div \frac{3}{70}$$
$$C = \frac{-1}{2} \times \frac{70}{3}$$
$$C = \frac{-1}{1 \times \cancel{2}} \times \frac{35 \times \cancel{2}}{3}$$
$$\boxed{C = \frac{-35}{3}}$$

Corrigé de l'exercice 2

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

$$A = \frac{-9}{8} \times \left(\frac{-7}{3} - \frac{-1}{11}\right)$$
$$A = \frac{-9}{8} \times \left(\frac{-7_{\times 11}}{3_{\times 11}} - \frac{-1_{\times 3}}{11_{\times 3}}\right)$$
$$A = \frac{-9}{8} \times \left(\frac{-77}{33} - \frac{-3}{33}\right)$$
$$A = \frac{-9}{8} \times \frac{-74}{33}$$
$$A = \frac{-3 \times \cancel{3}}{-4 \times \cancel{-2}} \times \frac{37 \times \cancel{-2}}{11 \times \cancel{3}}$$
$$\boxed{A = \frac{111}{44}}$$

$$B = \frac{3}{4} + \frac{-27}{8} \div \frac{3}{8}$$
$$B = \frac{3}{4} + \frac{-27}{8} \times \frac{8}{3}$$
$$B = \frac{3}{4} + \frac{-9 \times \cancel{3}}{1 \times \cancel{8}} \times \frac{1 \times \cancel{8}}{1 \times \cancel{3}}$$
$$B = \frac{3}{4} + -9$$
$$B = \frac{3}{4} + \frac{-9_{\times 4}}{1_{\times 4}}$$
$$B = \frac{3}{4} + \frac{-36}{4}$$
$$\boxed{B = \frac{-33}{4}}$$

$$C = \frac{\frac{-9}{2}+4}{\frac{4}{3}+4}$$
$$C = \frac{\frac{-9}{2}+\frac{4_{\times 2}}{1_{\times 2}}}{\frac{4}{3}+\frac{4_{\times 3}}{1_{\times 3}}}$$
$$C = \frac{\frac{-9}{2}+\frac{8}{2}}{\frac{4}{3}+\frac{12}{3}}$$
$$C = \frac{-1}{2} \div \frac{16}{3}$$
$$C = \frac{-1}{2} \times \frac{3}{16}$$
$$C =$$
$$\boxed{C = \frac{-3}{32}}$$

Corrigé de l'exercice 3

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

$$A = \frac{-2}{3} \times \left(\frac{-11}{4} - \frac{-12}{13} \right)$$
$$A = \frac{-2}{3} \times \left(\frac{-11_{\times 13}}{4_{\times 13}} - \frac{-12_{\times 4}}{13_{\times 4}} \right)$$
$$A = \frac{-2}{3} \times \left(\frac{-143}{52} - \frac{-48}{52} \right)$$
$$A = \frac{-2}{3} \times \frac{-95}{52}$$
$$A = \frac{-1 \times \cancel{2}}{-3 \times \cancel{-1}} \times \frac{95 \times \cancel{-1}}{26 \times \cancel{2}}$$
$$\boxed{A = \frac{95}{78}}$$

$$B = \frac{\frac{-4}{5} + 4}{\frac{2}{3} + 6}$$
$$B = \frac{\frac{-4}{5} + \frac{4_{\times 5}}{1_{\times 5}}}{\frac{2}{3} + \frac{6_{\times 3}}{1_{\times 3}}}$$
$$B = \frac{\frac{-4}{5} + \frac{20}{5}}{\frac{2}{3} + \frac{18}{3}}$$
$$B = \frac{16}{5} \div \frac{20}{3}$$
$$B = \frac{16}{5} \times \frac{3}{20}$$
$$B = \frac{4 \times \cancel{4}}{5} \times \frac{3}{5 \times \cancel{4}}$$
$$\boxed{B = \frac{12}{25}}$$

$$C = -12 - \frac{3}{2} \div -1$$
$$C = -12 - \frac{3}{2} \times -1$$
$$C = -12 - \frac{3}{-2 \times \cancel{-1}} \times \frac{1 \times \cancel{-1}}{1}$$
$$C = -12 - \frac{-3}{2}$$
$$C = \frac{-12_{\times 2}}{1_{\times 2}} - \frac{-3}{2}$$
$$C = \frac{-24}{2} - \frac{-3}{2}$$
$$\boxed{C = \frac{-21}{2}}$$

Corrigé de l'exercice 4

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

$$A = \frac{-2}{7} - \frac{8}{35} \times \frac{14}{5}$$
$$A = \frac{-2}{7} - \frac{8}{5 \times \cancel{7}} \times \frac{2 \times \cancel{7}}{5}$$
$$A = \frac{-2}{7} - \frac{16}{25}$$
$$A = \frac{-2_{\times 25}}{7_{\times 25}} - \frac{16_{\times 7}}{25_{\times 7}}$$
$$A = \frac{-50}{175} - \frac{112}{175}$$
$$\boxed{A = \frac{-162}{175}}$$

$$B = \frac{7}{8} \div \left(\frac{2}{7} + \frac{5}{3} \right)$$
$$B = \frac{7}{8} \div \left(\frac{2_{\times 3}}{7_{\times 3}} + \frac{5_{\times 7}}{3_{\times 7}} \right)$$
$$B = \frac{7}{8} \div \left(\frac{6}{21} + \frac{35}{21} \right)$$
$$B = \frac{7}{8} \div \frac{41}{21}$$
$$B = \frac{7}{8} \times \frac{21}{41}$$
$$B =$$
$$\boxed{B = \frac{147}{328}}$$

$$C = \frac{\frac{-5}{2} - 2}{\frac{10}{7} + 4}$$
$$C = \frac{\frac{-5}{2} - \frac{2_{\times 2}}{1_{\times 2}}}{\frac{10}{7} + \frac{4_{\times 7}}{1_{\times 7}}}$$
$$C = \frac{\frac{-5}{2} - \frac{4}{2}}{\frac{10}{7} + \frac{28}{7}}$$
$$C = \frac{-9}{2} \div \frac{38}{7}$$
$$C = \frac{-9}{2} \times \frac{7}{38}$$
$$C =$$
$$\boxed{C = \frac{-63}{76}}$$

Corrigé de l'exercice 5

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

$$A = \frac{7}{8} \times \left(\frac{1}{12} + \frac{8}{5} \right)$$
$$A = \frac{7}{8} \times \left(\frac{1_{\times 5}}{12_{\times 5}} + \frac{8_{\times 12}}{5_{\times 12}} \right)$$
$$A = \frac{7}{8} \times \left(\frac{5}{60} + \frac{96}{60} \right)$$
$$A = \frac{7}{8} \times \frac{101}{60}$$
$$A =$$
$$\boxed{A = \frac{707}{480}}$$

$$B = \frac{\frac{4}{9} + 10}{\frac{9}{8} - 9}$$
$$B = \frac{\frac{4}{9} + \frac{10_{\times 9}}{1_{\times 9}}}{\frac{9}{8} - \frac{9_{\times 8}}{1_{\times 8}}}$$
$$B = \frac{\frac{4}{9} + \frac{90}{9}}{\frac{9}{8} - \frac{72}{8}}$$
$$B = \frac{94}{9} \div \frac{-63}{8}$$
$$B = \frac{94}{9} \times \frac{-8}{63}$$
$$B = \frac{94}{-9 \times \cancel{-1}} \times \frac{8 \times \cancel{-1}}{63}$$
$$\boxed{B = \frac{-752}{567}}$$

$$C = 2 + \frac{3}{10} \div \frac{3}{8}$$
$$C = 2 + \frac{3}{10} \times \frac{8}{3}$$
$$C = 2 + \frac{1 \times \cancel{3}}{5 \times \cancel{2}} \times \frac{4 \times \cancel{2}}{1 \times \cancel{3}}$$
$$C = 2 + \frac{4}{5}$$
$$C = \frac{2_{\times 5}}{1_{\times 5}} + \frac{4}{5}$$
$$C = \frac{10}{5} + \frac{4}{5}$$
$$\boxed{C = \frac{14}{5}}$$

Corrigé de l'exercice 6

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

$$A = \frac{-1}{2} \div \left(\frac{13}{4} + \frac{-13}{5} \right)$$
$$A = \frac{-1}{2} \div \left(\frac{13_{\times 5}}{4_{\times 5}} + \frac{-13_{\times 4}}{5_{\times 4}} \right)$$
$$A = \frac{-1}{2} \div \left(\frac{65}{20} + \frac{-52}{20} \right)$$
$$A = \frac{-1}{2} \div \frac{13}{20}$$
$$A = \frac{-1}{2} \times \frac{20}{13}$$
$$A = \frac{-1}{1 \times \cancel{2}} \times \frac{10 \times \cancel{2}}{13}$$
$$\boxed{A = \frac{-10}{13}}$$

$$B = \frac{\frac{7}{9} + 4}{\frac{5}{9} - 2}$$
$$B = \frac{\frac{7}{9} + \frac{4_{\times 9}}{1_{\times 9}}}{\frac{5}{9} - \frac{2_{\times 9}}{1_{\times 9}}}$$
$$B = \frac{\frac{7}{9} + \frac{36}{9}}{\frac{5}{9} - \frac{18}{9}}$$
$$B = \frac{43}{9} \div \frac{-13}{9}$$
$$B = \frac{43}{9} \times \frac{-9}{13}$$
$$B = \frac{43}{-1 \times \cancel{-9}} \times \frac{1 \times \cancel{-9}}{13}$$
$$\boxed{B = \frac{-43}{13}}$$

$$C = \frac{50}{9} + \frac{4}{9} \times \frac{9}{70}$$
$$C = \frac{50}{9} + \frac{2 \times \cancel{2}}{1 \times \cancel{9}} \times \frac{1 \times \cancel{9}}{35 \times \cancel{2}}$$
$$C = \frac{50}{9} + \frac{2}{35}$$
$$C = \frac{50_{\times 35}}{9_{\times 35}} + \frac{2_{\times 9}}{35_{\times 9}}$$
$$C = \frac{1750}{315} + \frac{18}{315}$$
$$\boxed{C = \frac{1\ 768}{315}}$$