

Exercice 1

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{7}{2} + \frac{9}{7} \div \frac{1}{14} & C = \frac{-2}{9} + \frac{13}{3} - \frac{-5}{18} & E = \frac{-11}{2} - \frac{-11}{4} \div \frac{-7}{4} \\ B = \frac{-9}{13} \div \frac{-1}{30} \times \frac{-13}{17} & D = \frac{-3}{20} + \frac{6}{31} \div \frac{-1}{31} & F = \frac{15}{19} \times \left(\frac{13}{5} + \frac{10}{3} \right) \end{array}$$

Exercice 2

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{-4}{3} \times \left(\frac{-15}{2} + \frac{-13}{10} \right) & C = \frac{-10}{21} \times \left(\frac{-13}{4} + \frac{-13}{20} \right) & E = \frac{-6}{5} + \frac{-3}{34} \div \frac{-15}{34} \\ B = \frac{4}{19} + \frac{-12}{19} - \frac{-9}{19} & D = \frac{7}{10} \div \frac{-1}{19} - \frac{-9}{10} & F = \frac{11}{27} \times \frac{-9}{2} - \frac{2}{3} \end{array}$$

Exercice 3

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{10}{7} + \frac{-5}{3} \div \frac{7}{15} & C = \frac{4}{9} + \frac{5}{9} - \frac{9}{14} & E = \frac{11}{3} + \frac{-7}{3} \div \frac{-7}{24} \\ B = \frac{-1}{2} + \frac{-9}{5} - \frac{-7}{2} & D = \frac{7}{4} \div \frac{5}{3} - \frac{-11}{30} & F = \frac{-16}{5} + \frac{3}{38} \div \frac{-3}{19} \end{array}$$

Exercice 4

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{1}{16} - \frac{3}{10} \times \frac{5}{8} & C = \frac{3}{2} - \frac{5}{21} \div \frac{6}{35} & E = \frac{1}{28} - \left(\frac{13}{4} + \frac{-3}{2} \right) \\ B = \frac{-14}{13} \div \left(\frac{5}{24} - \frac{1}{8} \right) & D = \frac{-3}{5} + \frac{7}{15} \div \frac{-1}{38} & F = \frac{-1}{4} - \frac{16}{3} + \frac{1}{6} \end{array}$$

Exercice 5

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{-5}{31} \times \left(\frac{-11}{5} + \frac{13}{20} \right) & C = \frac{13}{5} \div \frac{-13}{37} + \frac{13}{4} & E = \frac{-11}{39} \times \frac{-13}{5} + \frac{11}{30} \\ B = \frac{5}{4} \times \frac{-2}{3} \div \frac{-5}{21} & D = \frac{-9}{22} + \frac{-5}{13} \div \frac{10}{13} & F = \frac{5}{6} \times \frac{14}{5} - \frac{5}{3} \end{array}$$

Exercice 6

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{5}{17} \div \left(\frac{3}{32} - \frac{1}{32} \right) & C = \frac{7}{5} \div \left(\frac{-5}{21} + \frac{-1}{21} \right) & E = \frac{-7}{5} + \frac{-3}{20} \times \frac{-7}{3} \\ B = \frac{11}{20} - \frac{12}{23} \div \frac{-2}{23} & D = \frac{-11}{2} - \left(\frac{7}{3} + \frac{-13}{21} \right) & F = \frac{-8}{5} + \frac{-7}{3} \div \frac{-5}{32} \end{array}$$

Corrigé de l'exercice 1

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{7}{2} + \frac{9}{7} \div \frac{1}{14}$$

$$A = \frac{7}{2} + \frac{9}{7} \times 14$$

$$A = \frac{7}{2} + \frac{9}{1 \times 7} \times 2 \times 7$$

$$A = \frac{7}{2} + 18$$

$$A = \frac{7}{2} + \frac{18 \times 2}{1 \times 2}$$

$$A = \frac{43}{2}$$

$$B = \frac{-9}{13} \div \frac{-1}{30} \times \frac{-13}{17}$$

$$B = \frac{-9}{13} \times -30 \times \frac{-13}{17}$$

$$B = \frac{270}{13} \times \frac{-13}{17}$$

$$B = \frac{270}{1 \times 13} \times \frac{-1 \times 13}{17}$$

$$B = \frac{-270}{17}$$

$$C = \frac{-2}{9} + \frac{13}{3} - \frac{-5}{18}$$

$$C = \frac{-2}{9} + \frac{13 \times 3}{3 \times 3} - \frac{-5}{18}$$

$$C = \frac{37}{9} - \frac{-5}{18}$$

$$C = \frac{37 \times 2}{9 \times 2} - \frac{-5}{18}$$

$$C = \frac{79}{18}$$

$$D = \frac{-3}{20} + \frac{6}{31} \div \frac{-1}{31}$$

$$D = \frac{-3}{20} + \frac{6}{31} \times -31$$

$$D = \frac{-3}{20} + \frac{6}{1 \times 31} \times -1 \times 31$$

$$D = \frac{-3}{20} + -6$$

$$D = \frac{-3}{20} + \frac{-6 \times 20}{1 \times 20}$$

$$D = \frac{-123}{20}$$

$$E = \frac{-11}{2} - \frac{-11}{4} \div \frac{-7}{4}$$

$$E = \frac{-11}{2} - \frac{-11}{4} \times \frac{-4}{7}$$

$$E = \frac{-11}{2} - \frac{-11}{1 \times 4} \times \frac{-1 \times 4}{7}$$

$$E = \frac{-11}{2} - \frac{11}{7}$$

$$E = \frac{-11 \times 7}{2 \times 7} - \frac{11 \times 2}{7 \times 2}$$

$$E = \frac{-99}{14}$$

$$F = \frac{15}{19} \times \left(\frac{13}{5} + \frac{10}{3} \right)$$

$$F = \frac{15}{19} \times \left(\frac{13 \times 3}{5 \times 3} + \frac{10 \times 5}{3 \times 5} \right)$$

$$F = \frac{15}{19} \times \frac{89}{15}$$

$$F = \frac{1 \times 15}{19} \times \frac{89}{1 \times 15}$$

$$F = \frac{89}{19}$$

Corrigé de l'exercice 2

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-4}{3} \times \left(\frac{-15}{2} + \frac{-13}{10} \right)$$

$$A = \frac{-4}{3} \times \left(\frac{-15 \times 5}{2 \times 5} + \frac{-13}{10} \right)$$

$$A = \frac{-4}{3} \times \frac{-88}{10}$$

$$A = \frac{-4}{3} \times \frac{-44 \times 2}{5 \times 2}$$

$$A = \frac{-4}{3} \times \frac{-44}{5}$$

$$A = \frac{176}{15}$$

$$B = \frac{4}{19} + \frac{-12}{19} - \frac{-9}{19}$$

$$B = \frac{-8}{19} - \frac{-9}{19}$$

$$B = \frac{1}{19}$$

$$C = \frac{-10}{21} \times \left(\frac{-13}{4} + \frac{-13}{20} \right)$$

$$C = \frac{-10}{21} \times \left(\frac{-13 \times 5}{4 \times 5} + \frac{-13}{20} \right)$$

$$C = \frac{-10}{21} \times \frac{-78}{20}$$

$$C = \frac{-10}{21} \times \frac{-39 \times 2}{10 \times 2}$$

$$C = \frac{-10}{21} \times \frac{-39}{10}$$

$$C = \frac{-1 \times 10}{7 \times 3} \times \frac{-13 \times 3}{1 \times 10}$$

$$C = \frac{13}{7}$$

$$D = \frac{7}{10} \div \frac{-1}{19} - \frac{-9}{10}$$

$$D = \frac{7}{10} \times -19 - \frac{-9}{10}$$

$$D = \frac{-133}{10} - \frac{-9}{10}$$

$$D = \frac{-124}{10}$$

$$D = \frac{-62 \times 2}{5 \times 2}$$

$$D = \frac{-62}{5}$$

$$E = \frac{-6}{5} + \frac{-3}{34} \div \frac{-15}{34}$$

$$E = \frac{-6}{5} + \frac{-3}{34} \times \frac{-34}{15}$$

$$E = \frac{-6}{5} + \frac{-1 \times \cancel{34}}{1 \times \cancel{34}} \times \frac{-1 \times \cancel{34}}{5 \times \cancel{34}}$$

$$E = \frac{-6}{5} + \frac{1}{5}$$

$$E = \frac{-5}{5}$$

$$E = \frac{-1 \times 5}{1 \times 5}$$

$$E = -1$$

$$F = \frac{11}{27} \times \frac{-9}{2} - \frac{2}{3}$$

$$F = \frac{11}{3 \times \cancel{9}} \times \frac{-1 \times \cancel{9}}{2} - \frac{2}{3}$$

$$F = \frac{-11}{6} - \frac{2}{3}$$

$$F = \frac{-11}{6} - \frac{2 \times 2}{3 \times 2}$$

$$F = \frac{-15}{6}$$

$$F = \frac{-5 \times 3}{2 \times 3}$$

$$F = \frac{-5}{2}$$

Corrigé de l'exercice 3

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{10}{7} + \frac{-5}{3} \div \frac{7}{15}$$

$$A = \frac{10}{7} + \frac{-5}{3} \times \frac{15}{7}$$

$$A = \frac{10}{7} + \frac{-5}{1 \times \cancel{3}} \times \frac{5 \times \cancel{3}}{7}$$

$$A = \frac{10}{7} + \frac{-25}{7}$$

$$A = \frac{-15}{7}$$

$$B = \frac{-1}{2} + \frac{-9}{5} - \frac{-7}{2}$$

$$B = \frac{-1 \times 5}{2 \times 5} + \frac{-9 \times 2}{5 \times 2} - \frac{-7}{2}$$

$$B = \frac{-23}{10} - \frac{-7}{2}$$

$$B = \frac{-23}{10} - \frac{-7 \times 5}{2 \times 5}$$

$$B = \frac{12}{10}$$

$$B = \frac{6 \times 2}{5 \times 2}$$

$$B = \frac{6}{5}$$

$$C = \frac{4}{9} + \frac{5}{9} - \frac{9}{14}$$

$$C = \frac{9}{9} - \frac{9}{14}$$

$$C = \frac{1 \times 9}{1 \times 9} - \frac{9}{14}$$

$$C = 1 - \frac{9}{14}$$

$$C = \frac{1 \times 14}{1 \times 14} - \frac{9}{14}$$

$$C = \frac{5}{14}$$

$$D = \frac{7}{4} \div \frac{5}{3} - \frac{-11}{30}$$

$$D = \frac{7}{4} \times \frac{3}{5} - \frac{-11}{30}$$

$$D = \frac{21}{20} - \frac{-11}{30}$$

$$D = \frac{21 \times 3}{20 \times 3} - \frac{-11 \times 2}{30 \times 2}$$

$$D = \frac{85}{60}$$

$$D = \frac{17 \times 5}{12 \times 5}$$

$$D = \frac{17}{12}$$

$$E = \frac{11}{3} + \frac{-7}{3} \div \frac{-7}{24}$$

$$E = \frac{11}{3} + \frac{-7}{3} \times \frac{-24}{7}$$

$$E = \frac{11}{3} + \frac{-1 \times \cancel{7}}{1 \times \cancel{3}} \times \frac{-8 \times \cancel{3}}{1 \times \cancel{7}}$$

$$E = \frac{11}{3} + 8$$

$$E = \frac{11}{3} + \frac{8 \times 3}{1 \times 3}$$

$$E = \frac{35}{3}$$

$$F = \frac{-16}{5} + \frac{3}{38} \div \frac{-3}{19}$$

$$F = \frac{-16}{5} + \frac{3}{38} \times \frac{-19}{3}$$

$$F = \frac{-16}{5} + \frac{1 \times \cancel{3}}{2 \times \cancel{19}} \times \frac{-1 \times \cancel{19}}{1 \times \cancel{3}}$$

$$F = \frac{-16}{5} + \frac{-1}{2}$$

$$F = \frac{-16 \times 2}{5 \times 2} + \frac{-1 \times 5}{2 \times 5}$$

$$F = \frac{-37}{10}$$

Corrigé de l'exercice 4

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{1}{16} - \frac{3}{10} \times \frac{5}{8}$$

$$A = \frac{1}{16} - \frac{3}{2 \times \cancel{5}} \times \frac{1 \times \cancel{5}}{8}$$

$$A = \frac{1}{16} - \frac{3}{16}$$

$$A = \frac{-2}{16}$$

$$A = \frac{-1 \times 2}{8 \times 2}$$

$$A = \frac{-1}{8}$$

$$B = \frac{-14}{13} \div \left(\frac{5}{24} - \frac{1}{8} \right)$$

$$B = \frac{-14}{13} \div \left(\frac{5}{24} - \frac{1 \times 3}{8 \times 3} \right)$$

$$B = \frac{-14}{13} \div \frac{2}{24}$$

$$B = \frac{-14}{13} \div \frac{1 \times 2}{12 \times 2}$$

$$B = \frac{-14}{13} \div \frac{1}{12}$$

$$B = \frac{-14}{13} \times 12$$

$$B = \frac{-168}{13}$$

$$C = \frac{3}{2} - \frac{5}{21} \div \frac{6}{35}$$

$$C = \frac{3}{2} - \frac{5}{21} \times \frac{35}{6}$$

$$C = \frac{3}{2} - \frac{5}{3 \times 7} \times \frac{5 \times 7}{6}$$

$$C = \frac{3}{2} - \frac{25}{18}$$

$$C = \frac{3 \times 9}{2 \times 9} - \frac{25}{18}$$

$$C = \frac{2}{18}$$

$$C = \frac{1 \times 2}{9 \times 2}$$

$$C = \frac{1}{9}$$

$$D = \frac{-3}{5} + \frac{7}{15} \div \frac{-1}{38}$$

$$D = \frac{-3}{5} + \frac{7}{15} \times -38$$

$$D = \frac{-3}{5} + \frac{-266}{15}$$

$$D = \frac{-3 \times 3}{5 \times 3} + \frac{-266}{15}$$

$$D = \frac{-275}{15}$$

$$D = \frac{-55 \times 5}{3 \times 5}$$

$$D = \frac{-55}{3}$$

$$E = \frac{1}{28} - \left(\frac{13}{4} + \frac{-3}{2} \right)$$

$$E = \frac{1}{28} - \left(\frac{13}{4} + \frac{-3 \times 2}{2 \times 2} \right)$$

$$E = \frac{1}{28} - \frac{7}{4}$$

$$E = \frac{1}{28} - \frac{7 \times 7}{4 \times 7}$$

$$E = \frac{-48}{28}$$

$$E = \frac{-12 \times 4}{7 \times 4}$$

$$E = \frac{-12}{7}$$

$$F = \frac{-1}{4} - \frac{16}{3} + \frac{1}{6}$$

$$F = \frac{-1 \times 3}{4 \times 3} - \frac{16 \times 4}{3 \times 4} + \frac{1}{6}$$

$$F = \frac{-67}{12} + \frac{1}{6}$$

$$F = \frac{-67}{12} + \frac{1 \times 2}{6 \times 2}$$

$$F = \frac{-65}{12}$$

Corrigé de l'exercice 5

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-5}{31} \times \left(\frac{-11}{5} + \frac{13}{20} \right)$$

$$A = \frac{-5}{31} \times \left(\frac{-11 \times 4}{5 \times 4} + \frac{13}{20} \right)$$

$$A = \frac{-5}{31} \times \frac{-31}{20}$$

$$A = \frac{-1 \times \cancel{5}}{1 \times \cancel{31}} \times \frac{-1 \times \cancel{31}}{4 \times \cancel{5}}$$

$$A = \frac{1}{4}$$

$$B = \frac{5}{4} \times \frac{-2}{3} \div \frac{-5}{21}$$

$$B = \frac{5}{2 \times 2} \times \frac{-1 \times \cancel{2}}{3} \div \frac{-5}{21}$$

$$B = \frac{-5}{6} \div \frac{-5}{21}$$

$$B = \frac{-5}{6} \times \frac{-21}{5}$$

$$B = \frac{-1 \times \cancel{5}}{2 \times \cancel{3}} \times \frac{-7 \times \cancel{3}}{1 \times \cancel{5}}$$

$$B = \frac{7}{2}$$

$$C = \frac{13}{5} \div \frac{-13}{37} + \frac{13}{4}$$

$$C = \frac{13}{5} \times \frac{-37}{13} + \frac{13}{4}$$

$$C = \frac{1 \times \cancel{13}}{5} \times \frac{-37}{1 \times \cancel{13}} + \frac{13}{4}$$

$$C = \frac{-37}{5} + \frac{13}{4}$$

$$C = \frac{-37 \times 4}{5 \times 4} + \frac{13 \times 5}{4 \times 5}$$

$$C = \frac{-83}{20}$$

$$D = \frac{-9}{22} + \frac{-5}{13} \div \frac{10}{13}$$

$$D = \frac{-9}{22} + \frac{-5}{13} \times \frac{13}{10}$$

$$D = \frac{-9}{22} + \frac{-1 \times \cancel{5}}{1 \times \cancel{13}} \times \frac{1 \times \cancel{13}}{2 \times \cancel{5}}$$

$$D = \frac{-9}{22} + \frac{-1}{2}$$

$$D = \frac{-9}{22} + \frac{-1 \times 11}{2 \times 11}$$

$$D = \frac{-20}{22}$$

$$D = \frac{-10 \times 2}{11 \times 2}$$

$$D = \frac{-10}{11}$$

$$E = \frac{-11}{39} \times \frac{-13}{5} + \frac{11}{30}$$

$$E = \frac{-11}{3 \times \cancel{13}} \times \frac{-1 \times \cancel{13}}{5} + \frac{11}{30}$$

$$E = \frac{11}{15} + \frac{11}{30}$$

$$E = \frac{11 \times 2}{15 \times 2} + \frac{11}{30}$$

$$E = \frac{33}{30}$$

$$E = \frac{11 \times 3}{10 \times 3}$$

$$E = \frac{11}{10}$$

$$F = \frac{5}{6} \times \frac{14}{5} - \frac{5}{3}$$

$$F = \frac{1 \times \cancel{5}}{3 \times \cancel{2}} \times \frac{7 \times \cancel{2}}{1 \times \cancel{5}} - \frac{5}{3}$$

$$F = \frac{7}{3} - \frac{5}{3}$$

$$F = \frac{2}{3}$$

Corrigé de l'exercice 6

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{5}{17} \div \left(\frac{3}{32} - \frac{1}{32} \right)$$

$$A = \frac{5}{17} \div \frac{2}{32}$$

$$A = \frac{5}{17} \div \frac{1 \times 2}{16 \times 2}$$

$$A = \frac{5}{17} \div \frac{1}{16}$$

$$A = \frac{5}{17} \times 16$$

$$A = \frac{80}{17}$$

$$B = \frac{11}{20} - \frac{12}{23} \div \frac{-2}{23}$$

$$B = \frac{11}{20} - \frac{12}{23} \times \frac{-23}{2}$$

$$B = \frac{11}{20} - \frac{6 \times \cancel{2}}{1 \times \cancel{23}} \times \frac{-1 \times \cancel{23}}{1 \times \cancel{2}}$$

$$B = \frac{11}{20} - -6$$

$$B = \frac{11}{20} - \frac{-6 \times 20}{1 \times 20}$$

$$B = \frac{131}{20}$$

$$C = \frac{7}{5} \div \left(\frac{-5}{21} + \frac{-1}{21} \right)$$

$$C = \frac{7}{5} \div \frac{-6}{21}$$

$$C = \frac{7}{5} \div \frac{-2 \times 3}{7 \times 3}$$

$$C = \frac{7}{5} \div \frac{-2}{7}$$

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

$$C = \frac{-49}{10}$$

$$D = \frac{-11}{2} - \left(\frac{7}{3} + \frac{-13}{21} \right)$$

$$D = \frac{-11}{2} - \left(\frac{7 \times 7}{3 \times 7} + \frac{-13}{21} \right)$$

$$D = \frac{-11}{2} - \frac{36}{21}$$

$$D = \frac{-11}{2} - \frac{12 \times 3}{7 \times 3}$$

$$D = \frac{-11}{2} - \frac{12}{7}$$

$$D = \frac{-11 \times 7}{2 \times 7} - \frac{12 \times 2}{7 \times 2}$$

$$D = \frac{-101}{14}$$

$$E = \frac{-7}{5} + \frac{-3}{20} \times \frac{-7}{3}$$

$$E = \frac{-7}{5} + \frac{-1 \times \cancel{3}}{20} \times \frac{-7}{1 \times \cancel{3}}$$

$$E = \frac{-7}{5} + \frac{7}{20}$$

$$E = \frac{-7 \times 4}{5 \times 4} + \frac{7}{20}$$

$$E = \frac{-21}{20}$$

$$F = \frac{-8}{5} + \frac{-7}{3} \div \frac{-5}{32}$$

$$F = \frac{-8}{5} + \frac{-7}{3} \times \frac{-32}{5}$$

$$F = \frac{-8}{5} + \frac{224}{15}$$

$$F = \frac{-8 \times 3}{5 \times 3} + \frac{224}{15}$$

$$F = \frac{200}{15}$$

$$F = \frac{40 \times 5}{3 \times 5}$$

$$F = \frac{40}{3}$$

Exercice 1

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{-11}{38} \div \frac{-1}{22} - \frac{1}{19} \\ B = \frac{11}{20} - \frac{7}{4} \div \frac{-15}{16} \end{array} \quad \left| \quad \begin{array}{l} C = \frac{-3}{14} + \frac{-5}{13} \div \frac{-7}{39} \\ D = \frac{-8}{3} \times \frac{15}{4} \div \frac{5}{24} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{1}{2} \times \left(\frac{-15}{4} + \frac{1}{12} \right) \\ F = \frac{5}{14} + \frac{-11}{21} - \frac{-11}{10} \end{array} \right.$$

Exercice 2

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{-15}{13} \div \frac{14}{13} \times \frac{-13}{15} \\ B = \frac{2}{13} \div \left(\frac{-9}{2} + \frac{7}{2} \right) \end{array} \quad \left| \quad \begin{array}{l} C = \frac{11}{10} + \frac{-6}{19} \div \frac{-1}{38} \\ D = \frac{-11}{4} + \frac{16}{5} \times \frac{9}{4} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{-1}{2} - \frac{-13}{33} \times \frac{11}{3} \\ F = \frac{-2}{15} - \frac{-16}{11} \div \frac{8}{11} \end{array} \right.$$

Exercice 3

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{-10}{9} \div \frac{10}{11} - \frac{-11}{2} \\ B = \frac{5}{2} - \frac{3}{4} \div \frac{-2}{7} \end{array} \quad \left| \quad \begin{array}{l} C = \frac{5}{6} \times \frac{14}{5} - \frac{-11}{2} \\ D = \frac{-4}{13} - \left(\frac{3}{13} + \frac{-1}{13} \right) \end{array} \quad \left| \quad \begin{array}{l} E = \frac{1}{4} - \frac{-9}{26} \div \frac{-1}{26} \\ F = \frac{-1}{2} + \frac{-11}{4} \div \frac{5}{39} \end{array} \right.$$

Exercice 4

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{-1}{36} - \frac{1}{16} \div \frac{-1}{20} \\ B = \frac{7}{20} \div \left(\frac{3}{5} + \frac{3}{10} \right) \end{array} \quad \left| \quad \begin{array}{l} C = \frac{-16}{15} + \frac{14}{5} \div \frac{-1}{13} \\ D = \frac{-15}{2} + \frac{-3}{2} \div \frac{-1}{28} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{1}{16} - \frac{-11}{24} \div \frac{-1}{39} \\ F = \frac{-3}{20} - \frac{-15}{7} \div \frac{-6}{35} \end{array} \right.$$

Exercice 5

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{3}{25} \div \left(\frac{-1}{2} + \frac{3}{10} \right) \\ B = \frac{-7}{10} \times \frac{-10}{9} - \frac{11}{3} \end{array} \quad \left| \quad \begin{array}{l} C = \frac{-14}{13} \times \frac{-13}{18} \div \frac{-1}{16} \\ D = \frac{11}{3} \times \frac{-1}{2} \div \frac{-5}{3} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{-14}{5} + \frac{-5}{14} \times \frac{-7}{25} \\ F = \frac{13}{21} \div \left(\frac{3}{10} + \frac{-7}{6} \right) \end{array} \right.$$

Exercice 6

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{-11}{16} + \frac{-13}{4} - \frac{1}{8} \\ B = \frac{1}{2} + \frac{13}{16} \times \frac{-16}{13} \end{array} \quad \left| \quad \begin{array}{l} C = \frac{-7}{4} \div \frac{5}{4} \times \frac{-16}{7} \\ D = \frac{4}{19} + \frac{6}{19} \div \frac{1}{14} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{-8}{5} \times \left(\frac{13}{6} - \frac{7}{24} \right) \\ F = \frac{5}{3} - \frac{-13}{8} \div \frac{-13}{20} \end{array} \right.$$

Corrigé de l'exercice 1

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-11}{38} \div \frac{-1}{22} - \frac{1}{19}$$

$$A = \frac{-11}{38} \times -22 - \frac{1}{19}$$

$$A = \frac{-11}{19 \times 2} \times -11 \times 2 - \frac{1}{19}$$

$$A = \frac{121}{19} - \frac{1}{19}$$

$$A = \frac{120}{19}$$

$$B = \frac{11}{20} - \frac{7}{4} \div \frac{-15}{16}$$

$$B = \frac{11}{20} - \frac{7}{4} \times \frac{-16}{15}$$

$$B = \frac{11}{20} - \frac{7}{1 \times 4} \times \frac{-4 \times 4}{15}$$

$$B = \frac{11}{20} - \frac{-28}{15}$$

$$B = \frac{11 \times 3}{20 \times 3} - \frac{-28 \times 4}{15 \times 4}$$

$$B = \frac{145}{60}$$

$$B = \frac{29 \times 5}{12 \times 5}$$

$$B = \frac{29}{12}$$

$$C = \frac{-3}{14} + \frac{-5}{13} \div \frac{-7}{39}$$

$$C = \frac{-3}{14} + \frac{-5}{13} \times \frac{-39}{7}$$

$$C = \frac{-3}{14} + \frac{-5}{1 \times 13} \times \frac{-3 \times 13}{7}$$

$$C = \frac{-3}{14} + \frac{15}{7}$$

$$C = \frac{-3}{14} + \frac{15 \times 2}{7 \times 2}$$

$$C = \frac{27}{14}$$

$$D = \frac{-8}{3} \times \frac{15}{4} \div \frac{5}{24}$$

$$D = \frac{-2 \times 4}{1 \times 3} \times \frac{5 \times 3}{1 \times 4} \div \frac{5}{24}$$

$$D = -10 \div \frac{5}{24}$$

$$D = -10 \times \frac{24}{5}$$

$$D = -2 \times 5 \times \frac{24}{1 \times 5}$$

$$D = -48$$

$$E = \frac{1}{2} \times \left(\frac{-15}{4} + \frac{1}{12} \right)$$

$$E = \frac{1}{2} \times \left(\frac{-15 \times 3}{4 \times 3} + \frac{1}{12} \right)$$

$$E = \frac{1}{2} \times \frac{-44}{12}$$

$$E = \frac{1}{2} \times \frac{-11 \times 4}{3 \times 4}$$

$$E = \frac{1}{2} \times \frac{-11}{3}$$

$$E = \frac{-11}{6}$$

$$F = \frac{5}{14} + \frac{-11}{21} - \frac{-11}{10}$$

$$F = \frac{5 \times 3}{14 \times 3} + \frac{-11 \times 2}{21 \times 2} - \frac{-11}{10}$$

$$F = \frac{-7}{42} - \frac{-11}{10}$$

$$F = \frac{-1 \times 7}{6 \times 7} - \frac{-11}{10}$$

$$F = \frac{-1}{6} - \frac{-11}{10}$$

$$F = \frac{-1 \times 5}{6 \times 5} - \frac{-11 \times 3}{10 \times 3}$$

$$F = \frac{28}{30}$$

$$F = \frac{14 \times 2}{15 \times 2}$$

$$F = \frac{14}{15}$$

Corrigé de l'exercice 2

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-15}{13} \div \frac{14}{13} \times \frac{-13}{15}$$

$$A = \frac{-15}{13} \times \frac{13}{14} \times \frac{-13}{15}$$

$$A = \frac{-15}{1 \times 13} \times \frac{1 \times 13}{14} \times \frac{-13}{15}$$

$$A = \frac{-15}{14} \times \frac{-13}{15}$$

$$A = \frac{-1 \times 15}{14} \times \frac{-13}{1 \times 15}$$

$$A = \frac{13}{14}$$

$$B = \frac{2}{13} \div \left(\frac{-9}{2} + \frac{7}{2} \right)$$

$$B = \frac{2}{13} \div \frac{-2}{2}$$

$$B = \frac{2}{13} \div \frac{-1 \times 2}{1 \times 2}$$

$$B = \frac{2}{13} \div -1$$

$$B = \frac{2}{13} \times -1$$

$$B = \frac{-2}{13}$$

$$C = \frac{11}{10} + \frac{-6}{19} \div \frac{-1}{38}$$

$$C = \frac{11}{10} + \frac{-6}{19} \times -38$$

$$C = \frac{11}{10} + \frac{-6}{1 \times 19} \times -2 \times 19$$

$$C = \frac{11}{10} + 12$$

$$C = \frac{11}{10} + \frac{12 \times 10}{1 \times 10}$$

$$C = \frac{131}{10}$$

$$D = \frac{-11}{4} + \frac{16}{5} \times \frac{9}{4}$$

$$D = \frac{-11}{4} + \frac{4 \times \cancel{4}}{5} \times \frac{9}{1 \times \cancel{4}}$$

$$D = \frac{-11}{4} + \frac{36}{5}$$

$$D = \frac{-11 \times 5}{4 \times 5} + \frac{36 \times 4}{5 \times 4}$$

$$D = \frac{89}{20}$$

$$E = \frac{-1}{2} - \frac{-13}{33} \times \frac{11}{3}$$

$$E = \frac{-1}{2} - \frac{-13}{3 \times \cancel{11}} \times \frac{1 \times \cancel{11}}{3}$$

$$E = \frac{-1}{2} - \frac{-13}{9}$$

$$E = \frac{-1 \times 9}{2 \times 9} - \frac{-13 \times 2}{9 \times 2}$$

$$E = \frac{17}{18}$$

$$F = \frac{-2}{15} - \frac{-16}{11} \div \frac{8}{11}$$

$$F = \frac{-2}{15} - \frac{-16}{11} \times \frac{11}{8}$$

$$F = \frac{-2}{15} - \frac{-2 \times \cancel{8}}{1 \times \cancel{11}} \times \frac{1 \times \cancel{11}}{1 \times \cancel{8}}$$

$$F = \frac{-2}{15} - -2$$

$$F = \frac{-2}{15} - \frac{-2 \times 15}{1 \times 15}$$

$$F = \frac{28}{15}$$

Corrigé de l'exercice 3

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-10}{9} \div \frac{10}{11} - \frac{-11}{2}$$

$$A = \frac{-10}{9} \times \frac{11}{10} - \frac{-11}{2}$$

$$A = \frac{-1 \times \cancel{10}}{9} \times \frac{11}{1 \times \cancel{10}} - \frac{-11}{2}$$

$$A = \frac{-11}{9} - \frac{-11}{2}$$

$$A = \frac{-11 \times 2}{9 \times 2} - \frac{-11 \times 9}{2 \times 9}$$

$$A = \frac{77}{18}$$

$$B = \frac{5}{2} - \frac{3}{4} \div \frac{-2}{7}$$

$$B = \frac{5}{2} - \frac{3}{4} \times \frac{-7}{2}$$

$$B = \frac{5}{2} - \frac{-21}{8}$$

$$B = \frac{5 \times 4}{2 \times 4} - \frac{-21}{8}$$

$$B = \frac{41}{8}$$

$$C = \frac{5}{6} \times \frac{14}{5} - \frac{-11}{2}$$

$$C = \frac{1 \times \cancel{5}}{3 \times \cancel{2}} \times \frac{7 \times \cancel{2}}{1 \times \cancel{5}} - \frac{-11}{2}$$

$$C = \frac{7}{3} - \frac{-11}{2}$$

$$C = \frac{7 \times 2}{3 \times 2} - \frac{-11 \times 3}{2 \times 3}$$

$$C = \frac{47}{6}$$

$$D = \frac{-4}{13} - \left(\frac{3}{13} + \frac{-1}{13} \right)$$

$$D = \frac{-4}{13} - \frac{2}{13}$$

$$D = \frac{-6}{13}$$

$$E = \frac{1}{4} - \frac{-9}{26} \div \frac{-1}{26}$$

$$E = \frac{1}{4} - \frac{-9}{26} \times -26$$

$$E = \frac{1}{4} - \frac{-9}{1 \times \cancel{26}} \times -1 \times \cancel{26}$$

$$E = \frac{1}{4} - 9$$

$$E = \frac{1}{4} - \frac{9 \times 4}{1 \times 4}$$

$$E = \frac{-35}{4}$$

$$F = \frac{-1}{2} + \frac{-11}{4} \div \frac{5}{39}$$

$$F = \frac{-1}{2} + \frac{-11}{4} \times \frac{39}{5}$$

$$F = \frac{-1}{2} + \frac{-429}{20}$$

$$F = \frac{-1 \times 10}{2 \times 10} + \frac{-429}{20}$$

$$F = \frac{-439}{20}$$

Corrigé de l'exercice 4

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-1}{36} - \frac{1}{16} \div \frac{-1}{20}$$

$$A = \frac{-1}{36} - \frac{1}{16} \times -20$$

$$A = \frac{-1}{36} - \frac{1}{4 \times \cancel{4}} \times -5 \times \cancel{4}$$

$$A = \frac{-1}{36} - \frac{-5}{4}$$

$$A = \frac{-1}{36} - \frac{-5 \times 9}{4 \times 9}$$

$$A = \frac{44}{36}$$

$$A = \frac{11 \times 4}{9 \times 4}$$

$$A = \frac{11}{9}$$

$$B = \frac{7}{20} \div \left(\frac{3}{5} + \frac{3}{10} \right)$$

$$B = \frac{7}{20} \div \left(\frac{3 \times 2}{5 \times 2} + \frac{3}{10} \right)$$

$$B = \frac{7}{20} \div \frac{9}{10}$$

$$B = \frac{7}{20} \times \frac{10}{9}$$

$$B = \frac{7}{2 \times \cancel{10}} \times \frac{1 \times \cancel{10}}{9}$$

$$B = \frac{7}{18}$$

$$C = \frac{-16}{15} + \frac{14}{5} \div \frac{-1}{13}$$

$$C = \frac{-16}{15} + \frac{14}{5} \times -13$$

$$C = \frac{-16}{15} + \frac{-182}{5}$$

$$C = \frac{-16}{15} + \frac{-182 \times 3}{5 \times 3}$$

$$C = \frac{-562}{15}$$

$$D = \frac{-15}{2} + \frac{-3}{2} \div \frac{-1}{28}$$

$$D = \frac{-15}{2} + \frac{-3}{2} \times -28$$

$$D = \frac{-15}{2} + \frac{-3}{1 \times \cancel{2}} \times -14 \times \cancel{2}$$

$$D = \frac{-15}{2} + 42$$

$$D = \frac{-15}{2} + \frac{42 \times 2}{1 \times 2}$$

$$D = \frac{69}{2}$$

$$E = \frac{1}{16} - \frac{-11}{24} \div \frac{-1}{39}$$

$$E = \frac{1}{16} - \frac{-11}{24} \times -39$$

$$E = \frac{1}{16} - \frac{-11}{8 \times \cancel{3}} \times -13 \times \cancel{3}$$

$$E = \frac{1}{16} - \frac{143}{8}$$

$$E = \frac{1}{16} - \frac{143 \times 2}{8 \times 2}$$

$$E = \frac{-285}{16}$$

$$F = \frac{-3}{20} - \frac{-15}{7} \div \frac{-6}{35}$$

$$F = \frac{-3}{20} - \frac{-15}{7} \times \frac{-35}{6}$$

$$F = \frac{-3}{20} - \frac{-5 \times \cancel{3}}{1 \times \cancel{7}} \times \frac{-5 \times \cancel{7}}{2 \times \cancel{3}}$$

$$F = \frac{-3}{20} - \frac{25}{2}$$

$$F = \frac{-3}{20} - \frac{25 \times 10}{2 \times 10}$$

$$F = \frac{-253}{20}$$

Corrigé de l'exercice 5

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{3}{25} \div \left(\frac{-1}{2} + \frac{3}{10} \right)$$

$$A = \frac{3}{25} \div \left(\frac{-1 \times 5}{2 \times 5} + \frac{3}{10} \right)$$

$$A = \frac{3}{25} \div \frac{-2}{10}$$

$$A = \frac{3}{25} \div \frac{-1 \times 2}{5 \times 2}$$

$$A = \frac{3}{25} \div \frac{-1}{5}$$

$$A = \frac{3}{25} \times -5$$

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

$$A = \frac{-3}{5}$$

$$B = \frac{-7}{10} \times \frac{-10}{9} - \frac{11}{3}$$

$$B = \frac{-7}{1 \times \cancel{10}} \times \frac{-1 \times \cancel{10}}{9} - \frac{11}{3}$$

$$B = \frac{7}{9} - \frac{11}{3}$$

$$B = \frac{7}{9} - \frac{11 \times 3}{3 \times 3}$$

$$B = \frac{-26}{9}$$

$$C = \frac{-14}{13} \times \frac{-13}{18} \div \frac{-1}{16}$$

$$C = \frac{-7 \times \cancel{2}}{1 \times \cancel{13}} \times \frac{-1 \times \cancel{13}}{9 \times \cancel{2}} \div \frac{-1}{16}$$

$$C = \frac{7}{9} \div \frac{-1}{16}$$

$$C = \frac{7}{9} \times -16$$

$$C = \frac{-112}{9}$$

$$D = \frac{11}{3} \times \frac{-1}{2} \div \frac{-5}{3}$$

$$D = \frac{-11}{6} \div \frac{-5}{3}$$

$$D = \frac{-11}{6} \times \frac{-3}{5}$$

$$D = \frac{-11}{2 \times \cancel{3}} \times \frac{-1 \times \cancel{3}}{5}$$

$$D = \frac{11}{10}$$

$$E = \frac{-14}{5} + \frac{-5}{14} \times \frac{-7}{25}$$

$$E = \frac{-14}{5} + \frac{-1 \times \cancel{5}}{2 \times \cancel{7}} \times \frac{-1 \times \cancel{7}}{5 \times \cancel{5}}$$

$$E = \frac{-14}{5} + \frac{1}{10}$$

$$E = \frac{-14 \times 2}{5 \times 2} + \frac{1}{10}$$

$$E = \frac{-27}{10}$$

$$F = \frac{13}{21} \div \left(\frac{3}{10} + \frac{-7}{6} \right)$$

$$F = \frac{13}{21} \div \left(\frac{3 \times 3}{10 \times 3} + \frac{-7 \times 5}{6 \times 5} \right)$$

$$F = \frac{13}{21} \div \frac{-26}{30}$$

$$F = \frac{13}{21} \div \frac{-13 \times 2}{15 \times 2}$$

$$F = \frac{13}{21} \div \frac{-13}{15}$$

$$F = \frac{13}{21} \times \frac{-15}{13}$$

$$F = \frac{1 \times \cancel{13}}{7 \times \cancel{3}} \times \frac{-5 \times \cancel{3}}{1 \times \cancel{13}}$$

$$F = \frac{-5}{7}$$

Corrigé de l'exercice 6

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-11}{16} + \frac{-13}{4} - \frac{1}{8}$$

$$A = \frac{-11}{16} + \frac{-13 \times 4}{4 \times 4} - \frac{1}{8}$$

$$A = \frac{-63}{16} - \frac{1}{8}$$

$$A = \frac{-63}{16} - \frac{1 \times 2}{8 \times 2}$$

$$A = \frac{-65}{16}$$

$$B = \frac{1}{2} + \frac{13}{16} \times \frac{-16}{13}$$

$$B = \frac{1}{2} + \frac{1 \times \cancel{13}}{1 \times \cancel{16}} \times \frac{-1 \times \cancel{16}}{1 \times \cancel{13}}$$

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

$$B = \frac{1}{2} + \frac{-1 \times 2}{1 \times 2}$$

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

$$C = \frac{-7}{4} \div \frac{5}{4} \times \frac{-16}{7}$$

$$C = \frac{-7}{4} \times \frac{4}{5} \times \frac{-16}{7}$$

$$C = \frac{-7}{1 \times \cancel{4}} \times \frac{1 \times \cancel{4}}{5} \times \frac{-16}{7}$$

$$C = \frac{-7}{5} \times \frac{-16}{7}$$

$$C = \frac{-1 \times \cancel{7}}{5} \times \frac{-16}{1 \times \cancel{7}}$$

$$C = \frac{16}{5}$$

$$D = \frac{4}{19} + \frac{6}{19} \div \frac{1}{14}$$

$$D = \frac{4}{19} + \frac{6}{19} \times 14$$

$$D = \frac{4}{19} + \frac{84}{19}$$

$$D = \frac{88}{19}$$

$$E = \frac{-8}{5} \times \left(\frac{13}{6} - \frac{7}{24} \right)$$

$$E = \frac{-8}{5} \times \left(\frac{13 \times 4}{6 \times 4} - \frac{7}{24} \right)$$

$$E = \frac{-8}{5} \times \frac{45}{24}$$

$$E = \frac{-8}{5} \times \frac{15 \times 3}{8 \times 3}$$

$$E = \frac{-8}{5} \times \frac{15}{8}$$

$$E = \frac{-1 \times \cancel{8}}{1 \times \cancel{5}} \times \frac{3 \times \cancel{5}}{1 \times \cancel{8}}$$

$$E = -3$$

$$F = \frac{5}{3} - \frac{-13}{8} \div \frac{-13}{20}$$

$$F = \frac{5}{3} - \frac{-13}{8} \times \frac{-20}{13}$$

$$F = \frac{5}{3} - \frac{-1 \times \cancel{13}}{2 \times \cancel{4}} \times \frac{-5 \times \cancel{4}}{1 \times \cancel{13}}$$

$$F = \frac{5}{3} - \frac{5}{2}$$

$$F = \frac{5 \times 2}{3 \times 2} - \frac{5 \times 3}{2 \times 3}$$

$$F = \frac{-5}{6}$$

Exercice 1

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{-14}{13} \times \left(\frac{4}{31} - \frac{4}{31} \right) & C = \frac{-7}{16} + \frac{-5}{27} \div \frac{10}{27} & E = \frac{-8}{3} + \frac{-7}{15} \div \frac{1}{33} \\ B = \frac{15}{28} + \frac{-15}{28} - \frac{-14}{19} & D = \frac{-7}{17} + \frac{16}{7} \div \frac{2}{21} & F = \frac{-1}{13} + \frac{16}{3} \div \frac{-4}{27} \end{array}$$

Exercice 2

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{13}{20} \times \left(\frac{5}{6} + \frac{-5}{2} \right) & C = \frac{-13}{5} \div \frac{3}{32} \times \frac{-3}{32} & E = \frac{-10}{7} \times \left(\frac{-15}{8} + \frac{9}{16} \right) \\ B = \frac{-3}{8} \div \left(\frac{14}{5} - \frac{8}{3} \right) & D = \frac{13}{2} \times \left(\frac{9}{2} - \frac{5}{26} \right) & F = \frac{-6}{5} - \frac{-16}{3} \div \frac{1}{6} \end{array}$$

Exercice 3

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{-5}{3} \times \frac{3}{4} \div \frac{10}{29} & C = \frac{-15}{16} \div \left(\frac{13}{14} - \frac{11}{14} \right) & E = \frac{6}{5} - \frac{-14}{3} \div \frac{1}{11} \\ B = \frac{-15}{19} \div \frac{5}{38} \times \frac{-3}{2} & D = \frac{-9}{5} - \frac{-7}{5} \div \frac{-2}{23} & F = \frac{-2}{9} \div \frac{1}{36} + \frac{-5}{19} \end{array}$$

Exercice 4

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{9}{8} \times \frac{8}{9} + \frac{7}{11} & C = \frac{-7}{10} \times \left(\frac{3}{35} - \frac{14}{5} \right) & E = \frac{-2}{3} - \left(\frac{5}{9} + \frac{-10}{3} \right) \\ B = \frac{-5}{16} + \frac{11}{16} \div \frac{11}{20} & D = \frac{-1}{18} - \left(\frac{7}{3} + \frac{-8}{3} \right) & F = \frac{-12}{17} \times \left(\frac{-12}{5} - \frac{-14}{3} \right) \end{array}$$

Exercice 5

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{14}{3} \div \frac{7}{18} - \frac{11}{7} & C = \frac{16}{13} \times \frac{13}{6} \div \frac{-6}{19} & E = \frac{-13}{14} \times \left(\frac{-11}{2} - \frac{15}{38} \right) \\ B = \frac{2}{3} \div \left(\frac{11}{15} + \frac{-4}{5} \right) & D = \frac{14}{9} - \frac{-5}{2} \div \frac{5}{39} & F = \frac{-8}{7} + \frac{16}{31} \div \frac{-7}{31} \end{array}$$

Exercice 6

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l|l|l} A = \frac{-14}{15} \div \left(\frac{14}{15} - \frac{-1}{5} \right) & C = \frac{9}{7} + \frac{-5}{6} \div \frac{7}{33} & E = \frac{9}{2} \div \frac{5}{19} + \frac{-9}{20} \\ B = \frac{15}{32} \times \frac{4}{3} \div \frac{5}{13} & D = \frac{-11}{9} + \frac{2}{3} \div \frac{-1}{11} & F = \frac{11}{8} \div \frac{11}{24} + \frac{-6}{13} \end{array}$$

Corrigé de l'exercice 1

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-14}{13} \times \left(\frac{4}{31} - \frac{4}{31} \right)$$

$$A = \frac{-14}{13} \times 0$$

$$A = 0$$

$$B = \frac{15}{28} + \frac{-15}{28} - \frac{-14}{19}$$

$$B = 0 - \frac{-14}{19}$$

$$B = \frac{14}{19}$$

$$C = \frac{-7}{16} + \frac{-5}{27} \div \frac{10}{27}$$

$$C = \frac{-7}{16} + \frac{-5}{27} \times \frac{27}{10}$$

$$C = \frac{-7}{16} + \frac{-1 \times \cancel{5}}{1 \times \cancel{27}} \times \frac{1 \times \cancel{27}}{2 \times \cancel{5}}$$

$$C = \frac{-7}{16} + \frac{-1}{2}$$

$$C = \frac{-7}{16} + \frac{-1 \times 8}{2 \times 8}$$

$$C = \frac{-15}{16}$$

$$D = \frac{-7}{17} + \frac{16}{7} \div \frac{2}{21}$$

$$D = \frac{-7}{17} + \frac{16}{7} \times \frac{21}{2}$$

$$D = \frac{-7}{17} + \frac{8 \times \cancel{2}}{1 \times \cancel{7}} \times \frac{3 \times \cancel{7}}{1 \times \cancel{2}}$$

$$D = \frac{-7}{17} + 24$$

$$D = \frac{-7}{17} + \frac{24 \times 17}{1 \times 17}$$

$$D = \frac{401}{17}$$

$$E = \frac{-8}{3} + \frac{-7}{15} \div \frac{1}{33}$$

$$E = \frac{-8}{3} + \frac{-7}{15} \times 33$$

$$E = \frac{-8}{3} + \frac{-7}{5 \times \cancel{3}} \times 11 \times \cancel{3}$$

$$E = \frac{-8}{3} + \frac{-77}{5}$$

$$E = \frac{-8 \times 5}{3 \times 5} + \frac{-77 \times 3}{5 \times 3}$$

$$E = \frac{-271}{15}$$

$$F = \frac{-1}{13} + \frac{16}{3} \div \frac{-4}{27}$$

$$F = \frac{-1}{13} + \frac{16}{3} \times \frac{-27}{4}$$

$$F = \frac{-1}{13} + \frac{4 \times \cancel{4}}{1 \times \cancel{3}} \times \frac{-9 \times \cancel{3}}{1 \times \cancel{4}}$$

$$F = \frac{-1}{13} + -36$$

$$F = \frac{-1}{13} + \frac{-36 \times 13}{1 \times 13}$$

$$F = \frac{-469}{13}$$

Corrigé de l'exercice 2

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{13}{20} \times \left(\frac{5}{6} + \frac{-5}{2} \right)$$

$$A = \frac{13}{20} \times \left(\frac{5}{6} + \frac{-5 \times 3}{2 \times 3} \right)$$

$$A = \frac{13}{20} \times \frac{-10}{6}$$

$$A = \frac{13}{20} \times \frac{-5 \times 2}{3 \times 2}$$

$$A = \frac{13}{20} \times \frac{-5}{3}$$

$$A = \frac{13}{4 \times \cancel{5}} \times \frac{-1 \times \cancel{5}}{3}$$

$$A = \frac{-13}{12}$$

$$B = \frac{-3}{8} \div \left(\frac{14}{5} - \frac{8}{3} \right)$$

$$B = \frac{-3}{8} \div \left(\frac{14 \times 3}{5 \times 3} - \frac{8 \times 5}{3 \times 5} \right)$$

$$B = \frac{-3}{8} \div \frac{2}{15}$$

$$B = \frac{-3}{8} \times \frac{15}{2}$$

$$B = \frac{-45}{16}$$

$$C = \frac{-13}{5} \div \frac{3}{32} \times \frac{-3}{32}$$

$$C = \frac{-13}{5} \times \frac{32}{3} \times \frac{-3}{32}$$

$$C = \frac{-416}{15} \times \frac{-3}{32}$$

$$C = \frac{-13 \times \cancel{32}}{5 \times \cancel{3}} \times \frac{-1 \times \cancel{3}}{1 \times \cancel{32}}$$

$$C = \frac{13}{5}$$

$$D = \frac{13}{2} \times \left(\frac{9}{2} - \frac{5}{26} \right)$$

$$D = \frac{13}{2} \times \left(\frac{9 \times 13}{2 \times 13} - \frac{5}{26} \right)$$

$$D = \frac{13}{2} \times \frac{112}{26}$$

$$D = \frac{13}{2} \times \frac{56 \times 2}{13 \times 2}$$

$$D = \frac{13}{2} \times \frac{56}{13}$$

$$D = \frac{1 \times \cancel{13}}{1 \times \cancel{2}} \times \frac{28 \times \cancel{2}}{1 \times \cancel{13}}$$

$$D = 28$$

$$E = \frac{-10}{7} \times \left(\frac{-15}{8} + \frac{9}{16} \right)$$

$$E = \frac{-10}{7} \times \left(\frac{-15 \times 2}{8 \times 2} + \frac{9}{16} \right)$$

$$E = \frac{-10}{7} \times \frac{-21}{16}$$

$$E = \frac{-5 \times \cancel{2}}{1 \times \cancel{7}} \times \frac{-3 \times \cancel{7}}{8 \times \cancel{2}}$$

$$E = \frac{15}{8}$$

$$F = \frac{-6}{5} - \frac{-16}{3} \div \frac{1}{6}$$

$$F = \frac{-6}{5} - \frac{-16}{3} \times 6$$

$$F = \frac{-6}{5} - \frac{-16}{1 \times \cancel{3}} \times 2 \times \cancel{3}$$

$$F = \frac{-6}{5} - -32$$

$$F = \frac{-6}{5} - \frac{-32 \times 5}{1 \times 5}$$

$$F = \frac{154}{5}$$

Corrigé de l'exercice 3

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-5}{3} \times \frac{3}{4} \div \frac{10}{29}$$

$$A = \frac{-5}{1 \times \cancel{3}} \times \frac{1 \times \cancel{3}}{4} \div \frac{10}{29}$$

$$A = \frac{-5}{4} \div \frac{10}{29}$$

$$A = \frac{-5}{4} \times \frac{29}{10}$$

$$A = \frac{-1 \times \cancel{5}}{4} \times \frac{29}{2 \times \cancel{5}}$$

$$A = \frac{-29}{8}$$

$$B = \frac{-15}{19} \div \frac{5}{38} \times \frac{-3}{2}$$

$$B = \frac{-15}{19} \times \frac{38}{5} \times \frac{-3}{2}$$

$$B = \frac{-3 \times \cancel{5}}{1 \times \cancel{19}} \times \frac{2 \times \cancel{19}}{1 \times \cancel{5}} \times \frac{-3}{2}$$

$$B = -6 \times \frac{-3}{2}$$

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

$$B = 9$$

$$C = \frac{-15}{16} \div \left(\frac{13}{14} - \frac{11}{14} \right)$$

$$C = \frac{-15}{16} \div \frac{2}{14}$$

$$C = \frac{-15}{16} \div \frac{1 \times 2}{7 \times 2}$$

$$C = \frac{-15}{16} \div \frac{1}{7}$$

$$C = \frac{-15}{16} \times 7$$

$$C = \frac{-105}{16}$$

$$D = \frac{-9}{5} - \frac{-7}{5} \div \frac{-2}{23}$$

$$D = \frac{-9}{5} - \frac{-7}{5} \times \frac{-23}{2}$$

$$D = \frac{-9}{5} - \frac{161}{10}$$

$$D = \frac{-9 \times 2}{5 \times 2} - \frac{161}{10}$$

$$D = \frac{-179}{10}$$

$$E = \frac{6}{5} - \frac{-14}{3} \div \frac{1}{11}$$

$$E = \frac{6}{5} - \frac{-14}{3} \times 11$$

$$E = \frac{6}{5} - \frac{-154}{3}$$

$$E = \frac{6 \times 3}{5 \times 3} - \frac{-154 \times 5}{3 \times 5}$$

$$E = \frac{788}{15}$$

$$F = \frac{-2}{9} \div \frac{1}{36} + \frac{-5}{19}$$

$$F = \frac{-2}{9} \times 36 + \frac{-5}{19}$$

$$F = \frac{-2}{1 \times \cancel{9}} \times 4 \times \cancel{9} + \frac{-5}{19}$$

$$F = -8 + \frac{-5}{19}$$

$$F = \frac{-8 \times 19}{1 \times 19} + \frac{-5}{19}$$

$$F = \frac{-157}{19}$$

Corrigé de l'exercice 4

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{9}{8} \times \frac{8}{9} + \frac{7}{11}$$

$$A = \frac{1 \times \cancel{8}}{1 \times \cancel{8}} \times \frac{1 \times \cancel{8}}{1 \times \cancel{9}} + \frac{7}{11}$$

$$A = 1 + \frac{7}{11}$$

$$A = \frac{1 \times 11}{1 \times 11} + \frac{7}{11}$$

$$A = \frac{18}{11}$$

$$B = \frac{-5}{16} + \frac{11}{16} \div \frac{11}{20}$$

$$B = \frac{-5}{16} + \frac{11}{16} \times \frac{20}{11}$$

$$B = \frac{-5}{16} + \frac{1 \times \cancel{11}}{4 \times \cancel{4}} \times \frac{5 \times \cancel{4}}{1 \times \cancel{11}}$$

$$B = \frac{-5}{16} + \frac{5}{4}$$

$$B = \frac{-5}{16} + \frac{5 \times 4}{4 \times 4}$$

$$B = \frac{15}{16}$$

$$C = \frac{-7}{10} \times \left(\frac{3}{35} - \frac{14}{5} \right)$$

$$C = \frac{-7}{10} \times \left(\frac{3}{35} - \frac{14 \times 7}{5 \times 7} \right)$$

$$C = \frac{-7}{10} \times \frac{-95}{35}$$

$$C = \frac{-7}{10} \times \frac{-19 \times 5}{7 \times 5}$$

$$C = \frac{-7}{10} \times \frac{-19}{7}$$

$$C = \frac{-1 \times 7}{10} \times \frac{-19}{1 \times 7}$$

$$C = \frac{19}{10}$$

$$D = \frac{-1}{18} - \left(\frac{7}{3} + \frac{-8}{3} \right)$$

$$D = \frac{-1}{18} - \frac{-1}{3}$$

$$D = \frac{-1}{18} - \frac{-1 \times 6}{3 \times 6}$$

$$D = \frac{5}{18}$$

$$E = \frac{-2}{3} - \left(\frac{5}{9} + \frac{-10}{3} \right)$$

$$E = \frac{-2}{3} - \left(\frac{5}{9} + \frac{-10 \times 3}{3 \times 3} \right)$$

$$E = \frac{-2}{3} - \frac{-25}{9}$$

$$E = \frac{-2 \times 3}{3 \times 3} - \frac{-25}{9}$$

$$E = \frac{19}{9}$$

$$F = \frac{-12}{17} \times \left(\frac{-12}{5} - \frac{-14}{3} \right)$$

$$F = \frac{-12}{17} \times \left(\frac{-12 \times 3}{5 \times 3} - \frac{-14 \times 5}{3 \times 5} \right)$$

$$F = \frac{-12}{17} \times \frac{34}{15}$$

$$F = \frac{-4 \times 3}{1 \times 17} \times \frac{2 \times 17}{5 \times 3}$$

$$F = \frac{-8}{5}$$

Corrigé de l'exercice 5

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{14}{3} \div \frac{7}{18} - \frac{11}{7}$$

$$A = \frac{14}{3} \times \frac{18}{7} - \frac{11}{7}$$

$$A = \frac{2 \times 7}{1 \times 3} \times \frac{6 \times 3}{1 \times 7} - \frac{11}{7}$$

$$A = 12 - \frac{11}{7}$$

$$A = \frac{12 \times 7}{1 \times 7} - \frac{11}{7}$$

$$A = \frac{73}{7}$$

$$B = \frac{2}{3} \div \left(\frac{11}{15} + \frac{-4}{5} \right)$$

$$B = \frac{2}{3} \div \left(\frac{11}{15} + \frac{-4 \times 3}{5 \times 3} \right)$$

$$B = \frac{2}{3} \div \frac{-1}{15}$$

$$B = \frac{2}{3} \times -15$$

$$B = \frac{2}{1 \times 3} \times -5 \times 3$$

$$B = -10$$

$$C = \frac{16}{13} \times \frac{13}{6} \div \frac{-6}{19}$$

$$C = \frac{8 \times 2}{1 \times 13} \times \frac{1 \times 13}{3 \times 2} \div \frac{-6}{19}$$

$$C = \frac{8}{3} \div \frac{-6}{19}$$

$$C = \frac{8}{3} \times \frac{-19}{6}$$

$$C = \frac{4 \times 2}{3} \times \frac{-19}{3 \times 2}$$

$$C = \frac{-76}{9}$$

$$D = \frac{14}{9} - \frac{-5}{2} \div \frac{5}{39}$$

$$D = \frac{14}{9} - \frac{-5}{2} \times \frac{39}{5}$$

$$D = \frac{14}{9} - \frac{-1 \times 3}{2} \times \frac{39}{1 \times 3}$$

$$D = \frac{14}{9} - \frac{-39}{2}$$

$$D = \frac{14 \times 2}{9 \times 2} - \frac{-39 \times 9}{2 \times 9}$$

$$D = \frac{379}{18}$$

$$E = \frac{-13}{14} \times \left(\frac{-11}{2} - \frac{15}{38} \right)$$

$$E = \frac{-13}{14} \times \left(\frac{-11 \times 19}{2 \times 19} - \frac{15}{38} \right)$$

$$E = \frac{-13}{14} \times \frac{-224}{38}$$

$$E = \frac{-13}{14} \times \frac{-112 \times 2}{19 \times 2}$$

$$E = \frac{-13}{14} \times \frac{-112}{19}$$

$$E = \frac{-13}{1 \times 14} \times \frac{-8 \times 14}{19}$$

$$E = \frac{104}{19}$$

$$F = \frac{-8}{7} + \frac{16}{31} \div \frac{-7}{31}$$

$$F = \frac{-8}{7} + \frac{16}{31} \times \frac{-31}{7}$$

$$F = \frac{-8}{7} + \frac{16}{1 \times 31} \times \frac{-1 \times 31}{7}$$

$$F = \frac{-8}{7} + \frac{-16}{7}$$

$$F = \frac{-24}{7}$$

Corrigé de l'exercice 6

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-14}{15} \div \left(\frac{14}{15} - \frac{-1}{5} \right)$$

$$A = \frac{-14}{15} \div \left(\frac{14}{15} - \frac{-1 \times 3}{5 \times 3} \right)$$

$$A = \frac{-14}{15} \div \frac{17}{15}$$

$$A = \frac{-14}{15} \times \frac{15}{17}$$

$$A = \frac{-14}{1 \times \cancel{15}} \times \frac{1 \times \cancel{15}}{17}$$

$$A = \frac{-14}{17}$$

$$B = \frac{15}{32} \times \frac{4}{3} \div \frac{5}{13}$$

$$B = \frac{5 \times \cancel{3}}{8 \times \cancel{4}} \times \frac{1 \times \cancel{4}}{1 \times \cancel{3}} \div \frac{5}{13}$$

$$B = \frac{5}{8} \div \frac{5}{13}$$

$$B = \frac{5}{8} \times \frac{13}{5}$$

$$B = \frac{1 \times \cancel{5}}{8} \times \frac{13}{1 \times \cancel{5}}$$

$$B = \frac{13}{8}$$

$$C = \frac{9}{7} + \frac{-5}{6} \div \frac{7}{33}$$

$$C = \frac{9}{7} + \frac{-5}{6} \times \frac{33}{7}$$

$$C = \frac{9}{7} + \frac{-5}{2 \times \cancel{3}} \times \frac{11 \times \cancel{3}}{7}$$

$$C = \frac{9}{7} + \frac{-55}{14}$$

$$C = \frac{9 \times 2}{7 \times 2} + \frac{-55}{14}$$

$$C = \frac{-37}{14}$$

$$D = \frac{-11}{9} + \frac{2}{3} \div \frac{-1}{11}$$

$$D = \frac{-11}{9} + \frac{2}{3} \times -11$$

$$D = \frac{-11}{9} + \frac{-22}{3}$$

$$D = \frac{-11}{9} + \frac{-22 \times 3}{3 \times 3}$$

$$D = \frac{-77}{9}$$

$$E = \frac{9}{2} \div \frac{5}{19} + \frac{-9}{20}$$

$$E = \frac{9}{2} \times \frac{19}{5} + \frac{-9}{20}$$

$$E = \frac{171}{10} + \frac{-9}{20}$$

$$E = \frac{171 \times 2}{10 \times 2} + \frac{-9}{20}$$

$$E = \frac{333}{20}$$

$$F = \frac{11}{8} \div \frac{11}{24} + \frac{-6}{13}$$

$$F = \frac{11}{8} \times \frac{24}{11} + \frac{-6}{13}$$

$$F = \frac{1 \times \cancel{11}}{1 \times \cancel{8}} \times \frac{3 \times \cancel{8}}{1 \times \cancel{11}} + \frac{-6}{13}$$

$$F = 3 + \frac{-6}{13}$$

$$F = \frac{3 \times 13}{1 \times 13} + \frac{-6}{13}$$

$$F = \frac{33}{13}$$

Exercice 1

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{-1}{18} \div \left(\frac{-1}{5} + \frac{2}{5} \right) \\ B = \frac{-7}{22} + \frac{15}{32} \div \frac{-3}{16} \end{array} \quad \left| \quad \begin{array}{l} C = \frac{-11}{2} \times \frac{6}{11} \div \frac{15}{31} \\ D = \frac{14}{11} + \frac{13}{33} - \frac{-11}{9} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{-9}{20} \div \left(\frac{-10}{7} - \frac{-3}{7} \right) \\ F = \frac{-9}{13} + \frac{7}{25} \div \frac{-13}{25} \end{array} \right.$$

Exercice 2

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{-7}{4} + \frac{-6}{5} \times \frac{3}{8} \\ B = \frac{14}{11} + \frac{1}{9} \div \frac{11}{18} \end{array} \quad \left| \quad \begin{array}{l} C = \frac{-15}{4} \times \left(\frac{7}{2} - \frac{-5}{6} \right) \\ D = \frac{-6}{5} \times \frac{15}{8} \div \frac{3}{8} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{3}{2} \div \frac{3}{37} + \frac{9}{26} \\ F = \frac{11}{2} + \frac{1}{36} \div \frac{5}{18} \end{array} \right.$$

Exercice 3

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{-3}{5} - \frac{-9}{13} \times \frac{-13}{9} \\ B = \frac{11}{2} \times \frac{-4}{7} \div \frac{11}{15} \end{array} \quad \left| \quad \begin{array}{l} C = \frac{1}{28} - \frac{5}{4} \div \frac{-1}{27} \\ D = \frac{13}{2} - \frac{-3}{20} \times \frac{16}{3} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{-13}{6} \div \frac{-13}{30} \times \frac{7}{25} \\ F = \frac{4}{9} \times \frac{-9}{40} \div \frac{-2}{33} \end{array} \right.$$

Exercice 4

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{15}{26} \div \left(\frac{-3}{26} - \frac{-9}{26} \right) \\ B = \frac{15}{22} \div \left(\frac{1}{28} + \frac{9}{28} \right) \end{array} \quad \left| \quad \begin{array}{l} C = \frac{3}{10} \div \frac{-1}{33} \times \frac{-11}{9} \\ D = \frac{16}{35} \div \frac{16}{35} - \frac{6}{7} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{-3}{7} \times \left(\frac{-7}{3} + \frac{1}{2} \right) \\ F = \frac{-13}{3} + \frac{2}{3} \div \frac{10}{31} \end{array} \right.$$

Exercice 5

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{-10}{3} \times \left(\frac{-4}{5} - \frac{-7}{20} \right) \\ B = \frac{-4}{17} - \left(\frac{13}{17} + \frac{4}{17} \right) \end{array} \quad \left| \quad \begin{array}{l} C = \frac{7}{2} \div \left(\frac{-5}{9} + \frac{-1}{6} \right) \\ D = \frac{-5}{12} \div \frac{-1}{15} \times \frac{8}{15} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{6}{5} \times \frac{7}{3} \div \frac{-7}{3} \\ F = \frac{-9}{22} \times \frac{-11}{6} \div \frac{-3}{4} \end{array} \right.$$

Exercice 6

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$\begin{array}{l} A = \frac{-13}{7} - \left(\frac{-3}{28} + \frac{3}{4} \right) \\ B = \frac{1}{40} - \left(\frac{-1}{10} + \frac{-7}{4} \right) \end{array} \quad \left| \quad \begin{array}{l} C = \frac{-7}{8} + \frac{-10}{3} \div \frac{8}{27} \\ D = \frac{-8}{15} + \frac{4}{11} \times \frac{11}{3} \end{array} \quad \left| \quad \begin{array}{l} E = \frac{9}{28} + \frac{-9}{7} \div \frac{-4}{21} \\ F = \frac{-9}{4} + \frac{13}{20} - \frac{-13}{4} \end{array} \right.$$

Corrigé de l'exercice 1

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-1}{18} \div \left(\frac{-1}{5} + \frac{2}{5} \right)$$

$$A = \frac{-1}{18} \div \frac{1}{5}$$

$$A = \frac{-1}{18} \times 5$$

$$A = \frac{-5}{18}$$

$$B = \frac{-7}{22} + \frac{15}{32} \div \frac{-3}{16}$$

$$B = \frac{-7}{22} + \frac{15}{32} \times \frac{-16}{3}$$

$$B = \frac{-7}{22} + \frac{5 \times \cancel{3}}{2 \times \cancel{16}} \times \frac{-1 \times \cancel{16}}{1 \times \cancel{3}}$$

$$B = \frac{-7}{22} + \frac{-5}{2}$$

$$B = \frac{-7}{22} + \frac{-5 \times 11}{2 \times 11}$$

$$B = \frac{-62}{22}$$

$$B = \frac{-31 \times 2}{11 \times 2}$$

$$B = \frac{-31}{11}$$

$$C = \frac{-11}{2} \times \frac{6}{11} \div \frac{15}{31}$$

$$C = \frac{-1 \times \cancel{11}}{1 \times \cancel{2}} \times \frac{3 \times \cancel{2}}{1 \times \cancel{11}} \div \frac{15}{31}$$

$$C = -3 \div \frac{15}{31}$$

$$C = -3 \times \frac{31}{15}$$

$$C = -1 \times \cancel{3} \times \frac{31}{5 \times \cancel{3}}$$

$$C = \frac{-31}{5}$$

$$D = \frac{14}{11} + \frac{13}{33} - \frac{-11}{9}$$

$$D = \frac{14 \times 3}{11 \times 3} + \frac{13}{33} - \frac{-11}{9}$$

$$D = \frac{55}{33} - \frac{-11}{9}$$

$$D = \frac{5 \times 11}{3 \times 11} - \frac{-11}{9}$$

$$D = \frac{5}{3} - \frac{-11}{9}$$

$$D = \frac{5 \times 3}{3 \times 3} - \frac{-11}{9}$$

$$D = \frac{26}{9}$$

$$E = \frac{-9}{20} \div \left(\frac{-10}{7} - \frac{-3}{7} \right)$$

$$E = \frac{-9}{20} \div \frac{-7}{7}$$

$$E = \frac{-9}{20} \div \frac{-1 \times 7}{1 \times 7}$$

$$E = \frac{-9}{20} \div -1$$

$$E = \frac{-9}{20} \times -1$$

$$E = \frac{9}{20}$$

$$F = \frac{-9}{13} + \frac{7}{25} \div \frac{-13}{25}$$

$$F = \frac{-9}{13} + \frac{7}{25} \times \frac{-25}{13}$$

$$F = \frac{-9}{13} + \frac{7}{1 \times \cancel{25}} \times \frac{-1 \times \cancel{25}}{13}$$

$$F = \frac{-9}{13} + \frac{-7}{13}$$

$$F = \frac{-16}{13}$$

Corrigé de l'exercice 2

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-7}{4} + \frac{-6}{5} \times \frac{3}{8}$$

$$A = \frac{-7}{4} + \frac{-3 \times \cancel{2}}{5} \times \frac{3}{4 \times \cancel{2}}$$

$$A = \frac{-7}{4} + \frac{-9}{20}$$

$$A = \frac{-7 \times 5}{4 \times 5} + \frac{-9}{20}$$

$$A = \frac{-44}{20}$$

$$A = \frac{-11 \times 4}{5 \times 4}$$

$$A = \frac{-11}{5}$$

$$B = \frac{14}{11} + \frac{1}{9} \div \frac{11}{18}$$

$$B = \frac{14}{11} + \frac{1}{9} \times \frac{18}{11}$$

$$B = \frac{14}{11} + \frac{1}{1 \times \cancel{9}} \times \frac{2 \times \cancel{9}}{11}$$

$$B = \frac{14}{11} + \frac{2}{11}$$

$$B = \frac{16}{11}$$

$$C = \frac{-15}{4} \times \left(\frac{7}{2} - \frac{-5}{6} \right)$$

$$C = \frac{-15}{4} \times \left(\frac{7 \times 3}{2 \times 3} - \frac{-5}{6} \right)$$

$$C = \frac{-15}{4} \times \frac{26}{6}$$

$$C = \frac{-15}{4} \times \frac{13 \times 2}{3 \times 2}$$

$$C = \frac{-15}{4} \times \frac{13}{3}$$

$$C = \frac{-5 \times \cancel{3}}{4} \times \frac{13}{1 \times \cancel{3}}$$

$$C = \frac{-65}{4}$$

$$D = \frac{-6}{5} \times \frac{15}{8} \div \frac{3}{8}$$

$$D = \frac{-3 \times \cancel{2}}{1 \times \cancel{5}} \times \frac{3 \times \cancel{5}}{4 \times \cancel{2}} \div \frac{3}{8}$$

$$D = \frac{-9}{4} \div \frac{3}{8}$$

$$D = \frac{-9}{4} \times \frac{8}{3}$$

$$D = \frac{-3 \times \cancel{3}}{1 \times \cancel{4}} \times \frac{2 \times \cancel{4}}{1 \times \cancel{3}}$$

$$D = -6$$

$$E = \frac{3}{2} \div \frac{3}{37} + \frac{9}{26}$$

$$E = \frac{3}{2} \times \frac{37}{3} + \frac{9}{26}$$

$$E = \frac{1 \times \cancel{3}}{2} \times \frac{37}{1 \times \cancel{3}} + \frac{9}{26}$$

$$E = \frac{37}{2} + \frac{9}{26}$$

$$E = \frac{37 \times 13}{2 \times 13} + \frac{9}{26}$$

$$E = \frac{490}{26}$$

$$E = \frac{245 \times 2}{13 \times 2}$$

$$E = \frac{245}{13}$$

$$F = \frac{11}{2} + \frac{1}{36} \div \frac{5}{18}$$

$$F = \frac{11}{2} + \frac{1}{36} \times \frac{18}{5}$$

$$F = \frac{11}{2} + \frac{1}{2 \times \cancel{18}} \times \frac{1 \times \cancel{18}}{5}$$

$$F = \frac{11}{2} + \frac{1}{10}$$

$$F = \frac{11 \times 5}{2 \times 5} + \frac{1}{10}$$

$$F = \frac{56}{10}$$

$$F = \frac{28 \times 2}{5 \times 2}$$

$$F = \frac{28}{5}$$

Corrigé de l'exercice 3

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-3}{5} - \frac{-9}{13} \times \frac{-13}{9}$$

$$A = \frac{-3}{5} - \frac{-1 \times \cancel{9}}{1 \times \cancel{13}} \times \frac{-1 \times \cancel{13}}{1 \times \cancel{9}}$$

$$A = \frac{-3}{5} - 1$$

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

$$A = \frac{-8}{5}$$

$$B = \frac{11}{2} \times \frac{-4}{7} \div \frac{11}{15}$$

$$B = \frac{11}{1 \times \cancel{2}} \times \frac{-2 \times \cancel{2}}{7} \div \frac{11}{15}$$

$$B = \frac{-22}{7} \div \frac{11}{15}$$

$$B = \frac{-22}{7} \times \frac{15}{11}$$

$$B = \frac{-2 \times \cancel{11}}{7} \times \frac{15}{1 \times \cancel{11}}$$

$$B = \frac{-30}{7}$$

$$C = \frac{1}{28} - \frac{5}{4} \div \frac{-1}{27}$$

$$C = \frac{1}{28} - \frac{5}{4} \times -27$$

$$C = \frac{1}{28} - \frac{-135}{4}$$

$$C = \frac{1}{28} - \frac{-135 \times 7}{4 \times 7}$$

$$C = \frac{946}{28}$$

$$C = \frac{473 \times 2}{14 \times 2}$$

$$C = \frac{473}{14}$$

$$D = \frac{13}{2} - \frac{-3}{20} \times \frac{16}{3}$$

$$D = \frac{13}{2} - \frac{-1 \times \cancel{3}}{5 \times \cancel{4}} \times \frac{4 \times \cancel{4}}{1 \times \cancel{3}}$$

$$D = \frac{13}{2} - \frac{-4}{5}$$

$$D = \frac{13 \times 5}{2 \times 5} - \frac{-4 \times 2}{5 \times 2}$$

$$D = \frac{73}{10}$$

$$E = \frac{-13}{6} \div \frac{-13}{30} \times \frac{7}{25}$$

$$E = \frac{-13}{6} \times \frac{-30}{13} \times \frac{7}{25}$$

$$E = \frac{-1 \times \cancel{13}}{1 \times \cancel{6}} \times \frac{-5 \times \cancel{6}}{1 \times \cancel{13}} \times \frac{7}{25}$$

$$E = 5 \times \frac{7}{25}$$

$$E = 1 \times \cancel{5} \times \frac{7}{5 \times \cancel{5}}$$

$$E = \frac{7}{5}$$

$$F = \frac{4}{9} \times \frac{-9}{40} \div \frac{-2}{33}$$

$$F = \frac{1 \times \cancel{4}}{1 \times \cancel{9}} \times \frac{-1 \times \cancel{9}}{10 \times \cancel{4}} \div \frac{-2}{33}$$

$$F = \frac{-1}{10} \div \frac{-2}{33}$$

$$F = \frac{-1}{10} \times \frac{-33}{2}$$

$$F = \frac{33}{20}$$

Corrigé de l'exercice 4

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{15}{26} \div \left(\frac{-3}{26} - \frac{-9}{26} \right)$$

$$A = \frac{15}{26} \div \frac{6}{26}$$

$$A = \frac{15}{26} \div \frac{3 \times 2}{13 \times 2}$$

$$A = \frac{15}{26} \div \frac{3}{13}$$

$$A = \frac{15}{26} \times \frac{13}{3}$$

$$A = \frac{5 \times \cancel{3}}{2 \times \cancel{13}} \times \frac{1 \times \cancel{13}}{1 \times \cancel{3}}$$

$$A = \frac{5}{2}$$

$$B = \frac{15}{22} \div \left(\frac{1}{28} + \frac{9}{28} \right)$$

$$B = \frac{15}{22} \div \frac{10}{28}$$

$$B = \frac{15}{22} \div \frac{5 \times 2}{14 \times 2}$$

$$B = \frac{15}{22} \div \frac{5}{14}$$

$$B = \frac{15}{22} \times \frac{14}{5}$$

$$B = \frac{3 \times \cancel{5}}{11 \times \cancel{2}} \times \frac{7 \times \cancel{2}}{1 \times \cancel{5}}$$

$$B = \frac{21}{11}$$

$$C = \frac{3}{10} \div \frac{-1}{33} \times \frac{-11}{9}$$

$$C = \frac{3}{10} \times -33 \times \frac{-11}{9}$$

$$C = \frac{-99}{10} \times \frac{-11}{9}$$

$$C = \frac{-11 \times \cancel{9}}{10} \times \frac{-11}{1 \times \cancel{9}}$$

$$C = \frac{121}{10}$$

$$D = \frac{16}{35} \div \frac{16}{35} - \frac{6}{7}$$

$$D = \frac{16}{35} \times \frac{35}{16} - \frac{6}{7}$$

$$D = \frac{1 \times \cancel{16}}{1 \times \cancel{35}} \times \frac{1 \times \cancel{35}}{1 \times \cancel{16}} - \frac{6}{7}$$

$$D = 1 - \frac{6}{7}$$

$$D = \frac{1 \times 7}{1 \times 7} - \frac{6}{7}$$

$$D = \frac{1}{7}$$

$$E = \frac{-3}{7} \times \left(\frac{-7}{3} + \frac{1}{2} \right)$$

$$E = \frac{-3}{7} \times \left(\frac{-7 \times 2}{3 \times 2} + \frac{1 \times 3}{2 \times 3} \right)$$

$$E = \frac{-3}{7} \times \frac{-11}{6}$$

$$E = \frac{-1 \times \cancel{3}}{7} \times \frac{-11}{2 \times \cancel{3}}$$

$$E = \frac{11}{14}$$

$$F = \frac{-13}{3} + \frac{2}{3} \div \frac{10}{31}$$

$$F = \frac{-13}{3} + \frac{2}{3} \times \frac{31}{10}$$

$$F = \frac{-13}{3} + \frac{1 \times \cancel{2}}{3} \times \frac{31}{5 \times \cancel{2}}$$

$$F = \frac{-13}{3} + \frac{31}{15}$$

$$F = \frac{-13 \times 5}{3 \times 5} + \frac{31}{15}$$

$$F = \frac{-34}{15}$$

Corrigé de l'exercice 5

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-10}{3} \times \left(\frac{-4}{5} - \frac{-7}{20} \right)$$

$$A = \frac{-10}{3} \times \left(\frac{-4 \times 4}{5 \times 4} - \frac{-7}{20} \right)$$

$$A = \frac{-10}{3} \times \frac{-9}{20}$$

$$A = \frac{-1 \times \cancel{10}}{1 \times \cancel{3}} \times \frac{-3 \times \cancel{3}}{2 \times \cancel{10}}$$

$$A = \frac{3}{2}$$

$$B = \frac{-4}{17} - \left(\frac{13}{17} + \frac{4}{17} \right)$$

$$B = \frac{-4}{17} - \frac{17}{17}$$

$$B = \frac{-4}{17} - \frac{1 \times 17}{1 \times 17}$$

$$B = \frac{-4}{17} - 1$$

$$B = \frac{-4}{17} - \frac{1 \times 17}{1 \times 17}$$

$$B = \frac{-21}{17}$$

$$C = \frac{7}{2} \div \left(\frac{-5}{9} + \frac{-1}{6} \right)$$

$$C = \frac{7}{2} \div \left(\frac{-5 \times 2}{9 \times 2} + \frac{-1 \times 3}{6 \times 3} \right)$$

$$C = \frac{7}{2} \div \frac{-13}{18}$$

$$C = \frac{7}{2} \times \frac{-18}{13}$$

$$C = \frac{7}{1 \times \cancel{2}} \times \frac{-9 \times \cancel{2}}{13}$$

$$C = \frac{-63}{13}$$

$$D = \frac{-5}{12} \div \frac{-1}{15} \times \frac{8}{15}$$

$$D = \frac{-5}{12} \times -15 \times \frac{8}{15}$$

$$D = \frac{-5}{4 \times \cancel{3}} \times -5 \times \cancel{3} \times \frac{8}{15}$$

$$D = \frac{25}{4} \times \frac{8}{15}$$

$$D = \frac{5 \times \cancel{5}}{1 \times \cancel{4}} \times \frac{2 \times \cancel{4}}{3 \times \cancel{5}}$$

$$D = \frac{10}{3}$$

$$E = \frac{6}{5} \times \frac{7}{3} \div \frac{-7}{3}$$

$$E = \frac{2 \times \cancel{3}}{5} \times \frac{7}{1 \times \cancel{3}} \div \frac{-7}{3}$$

$$E = \frac{14}{5} \div \frac{-7}{3}$$

$$E = \frac{14}{5} \times \frac{-3}{7}$$

$$E = \frac{2 \times \cancel{7}}{5} \times \frac{-3}{1 \times \cancel{7}}$$

$$E = \frac{-6}{5}$$

$$F = \frac{-9}{22} \times \frac{-11}{6} \div \frac{-3}{4}$$

$$F = \frac{-3 \times \cancel{3}}{2 \times \cancel{11}} \times \frac{-1 \times \cancel{11}}{2 \times \cancel{3}} \div \frac{-3}{4}$$

$$F = \frac{3}{4} \div \frac{-3}{4}$$

$$F = \frac{3}{4} \times \frac{-4}{3}$$

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

$$F = -1$$

Corrigé de l'exercice 6

Effectuer les calculs suivants et donner le résultat sous la forme d'une fraction simplifiée :

$$A = \frac{-13}{7} - \left(\frac{-3}{28} + \frac{3}{4} \right)$$

$$A = \frac{-13}{7} - \left(\frac{-3}{28} + \frac{3 \times 7}{4 \times 7} \right)$$

$$A = \frac{-13}{7} - \frac{18}{28}$$

$$A = \frac{-13}{7} - \frac{9 \times 2}{14 \times 2}$$

$$A = \frac{-13}{7} - \frac{9}{14}$$

$$A = \frac{-13 \times 2}{7 \times 2} - \frac{9}{14}$$

$$A = \frac{-35}{14}$$

$$A = \frac{-5 \times 7}{2 \times 7}$$

$$A = \frac{-5}{2}$$

$$B = \frac{1}{40} - \left(\frac{-1}{10} + \frac{-7}{4} \right)$$

$$B = \frac{1}{40} - \left(\frac{-1 \times 2}{10 \times 2} + \frac{-7 \times 5}{4 \times 5} \right)$$

$$B = \frac{1}{40} - \frac{-37}{20}$$

$$B = \frac{1}{40} - \frac{-37 \times 2}{20 \times 2}$$

$$B = \frac{75}{40}$$

$$B = \frac{15 \times 5}{8 \times 5}$$

$$B = \frac{15}{8}$$

$$C = \frac{-7}{8} + \frac{-10}{3} \div \frac{8}{27}$$

$$C = \frac{-7}{8} + \frac{-10}{3} \times \frac{27}{8}$$

$$C = \frac{-7}{8} + \frac{-5 \times \cancel{2}}{1 \times \cancel{3}} \times \frac{9 \times \cancel{3}}{4 \times \cancel{2}}$$

$$C = \frac{-7}{8} + \frac{-45}{4}$$

$$C = \frac{-7}{8} + \frac{-45 \times 2}{4 \times 2}$$

$$C = \frac{-97}{8}$$

$$D = \frac{-8}{15} + \frac{4}{11} \times \frac{11}{3}$$

$$D = \frac{-8}{15} + \frac{4}{1 \times \cancel{11}} \times \frac{1 \times \cancel{11}}{3}$$

$$D = \frac{-8}{15} + \frac{4}{3}$$

$$D = \frac{-8}{15} + \frac{4 \times 5}{3 \times 5}$$

$$D = \frac{12}{15}$$

$$D = \frac{4 \times 3}{5 \times 3}$$

$$D = \frac{4}{5}$$

$$E = \frac{9}{28} + \frac{-9}{7} \div \frac{-4}{21}$$

$$E = \frac{9}{28} + \frac{-9}{7} \times \frac{-21}{4}$$

$$E = \frac{9}{28} + \frac{-9}{1 \times \cancel{7}} \times \frac{-3 \times \cancel{7}}{4}$$

$$E = \frac{9}{28} + \frac{27}{4}$$

$$E = \frac{9}{28} + \frac{27 \times 7}{4 \times 7}$$

$$E = \frac{198}{28}$$

$$E = \frac{99 \times 2}{14 \times 2}$$

$$E = \frac{99}{14}$$

$$F = \frac{-9}{4} + \frac{13}{20} - \frac{-13}{4}$$

$$F = \frac{-9 \times 5}{4 \times 5} + \frac{13}{20} - \frac{-13}{4}$$

$$F = \frac{-32}{20} - \frac{-13}{4}$$

$$F = \frac{-8 \times 4}{5 \times 4} - \frac{-13}{4}$$

$$F = \frac{-8}{5} - \frac{-13}{4}$$

$$F = \frac{-8 \times 4}{5 \times 4} - \frac{-13 \times 5}{4 \times 5}$$

$$F = \frac{33}{20}$$