

Exercice 1

Effectuer sans calculatrice :

▶1. $-1 \times 4 = \dots$

▶2. $3 \times \dots = -12$

▶3. $\dots \times 4 = 24$

▶4. $\dots \div 10 = 3$

▶5. $9 + \dots = 14$

▶6. $-36 \div \dots = -6$

▶7. $\dots + 9 = 7$

▶8. $-7 - 2 = \dots$

▶9. $-3 \times 10 = \dots$

▶10. $-6 - (-3) = \dots$

▶11. $10 - 1 = \dots$

▶12. $-5 \div \dots = 5$

▶13. $-9 \div (-9) = \dots$

▶14. $5 - \dots = 10$

▶15. $9 + (-5) = \dots$

▶16. $3 \times (-7) = \dots$

▶17. $\dots + (-8) = -12$

▶18. $18 \div (-3) = \dots$

▶19. $\dots - (-8) = 4$

▶20. $7 + 8 = \dots$

Exercice 2

Effectuer sans calculatrice :

▶1. $-4 \times (-10) = \dots$

▶2. $16 - \dots = 7$

▶3. $10 + (-10) = \dots$

▶4. $\dots \times (-8) = -56$

▶5. $-7 - (-2) = \dots$

▶6. $\dots + (-4) = -12$

▶7. $-11 - (-5) = \dots$

▶8. $0 - 3 = \dots$

▶9. $1 + 1 = \dots$

▶10. $80 \div (-8) = \dots$

▶11. $14 \div (-7) = \dots$

▶12. $\dots \times 9 = -18$

▶13. $-36 \div (-6) = \dots$

▶14. $-24 \div 6 = \dots$

▶15. $5 \times (-10) = \dots$

▶16. $\dots \div 1 = -9$

▶17. $\dots \times (-9) = 36$

▶18. $4 - \dots = 1$

▶19. $9 + (-9) = \dots$

▶20. $6 + \dots = -2$

Exercice 3

Effectuer sans calculatrice :

▶1. $-90 \div 10 = \dots$

▶2. $-1 \times 10 = \dots$

▶3. $4 + 2 = \dots$

▶4. $-5 + (-2) = \dots$

▶5. $\dots \times (-9) = -72$

▶6. $\dots - 5 = 2$

▶7. $\dots - 2 = -6$

▶8. $-4 \times \dots = 40$

▶9. $9 \times (-9) = \dots$

▶10. $-5 - (-7) = \dots$

▶11. $18 \div 9 = \dots$

▶12. $-81 \div 9 = \dots$

▶13. $4 + 1 = \dots$

▶14. $8 + (-4) = \dots$

▶15. $\dots \times 10 = -70$

▶16. $\dots - 4 = -7$

▶17. $2 + 5 = \dots$

▶18. $-15 \div (-3) = \dots$

▶19. $0 - 10 = \dots$

▶20. $-100 \div \dots = -10$

Exercice 4

Effectuer sans calculatrice :

▶1. $3 \times (-7) = \dots$

▶2. $\dots \div (-9) = -9$

▶3. $2 + \dots = 3$

▶4. $-6 \times (-6) = \dots$

▶5. $-50 \div \dots = 10$

▶6. $-7 + \dots = -8$

▶7. $-2 + (-2) = \dots$

▶8. $1 - 3 = \dots$

▶9. $7 \times (-3) = \dots$

▶10. $\dots - 3 = 10$

▶11. $10 + \dots = 12$

▶12. $-17 - (-7) = \dots$

▶13. $10 \times \dots = -10$

▶14. $\dots - 2 = -5$

▶15. $7 - 1 = \dots$

▶16. $-24 \div (-6) = \dots$

▶17. $\dots \div 9 = 5$

▶18. $-3 \times \dots = -27$

▶19. $\dots \div 2 = -2$

▶20. $4 + 2 = \dots$

Exercice 5

Effectuer sans calculatrice :

▶1. - (-3) = 4

▶2. 7 + (-2) =

▶3. 5 × = 15

▶4. 0 - = -3

▶5. 4 + 2 =

▶6. + (-7) = -16

▶7. 50 ÷ = -10

▶8. 9 × 2 =

▶9. -6 - (-7) =

▶10. -6 - 2 =

▶11. 4 × = -36

▶12. 30 ÷ = -3

▶13. 50 ÷ (-5) =

▶14. + (-8) = 0

▶15. ÷ 1 = -6

▶16. 3 - 8 =

▶17. 3 × = -21

▶18. 15 ÷ 3 =

▶19. 3 + (-4) =

▶20. -4 × = 12

Exercice 6

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

$$A = \frac{3}{4} + \frac{7}{12}$$

$$B = \frac{13}{24} - \frac{13}{6}$$

$$C = \frac{9}{5} - \frac{10}{3}$$

$$D = \frac{4}{3} + \frac{9}{5}$$

$$E = \frac{-13}{5} - \frac{14}{3}$$

$$F = \frac{-7}{2} + \frac{-12}{5}$$

$$G = \frac{-11}{10} - \frac{-5}{4}$$

$$H = \frac{-2}{21} + \frac{1}{6}$$

Exercice 7

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

$$A = \frac{3}{16} + \frac{7}{4}$$

$$B = \frac{5}{6} - 14$$

$$C = \frac{2}{3} + \frac{13}{2}$$

$$D = \frac{11}{4} - \frac{6}{5}$$

$$E = \frac{9}{4} - \frac{-5}{3}$$

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

$$G = \frac{-11}{4} - \frac{-7}{10}$$

$$H = \frac{-11}{9} + \frac{-13}{6}$$

Exercice 8

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

$$A = \frac{1}{6} - \frac{5}{18}$$

$$B = 7 + \frac{11}{8}$$

$$C = \frac{13}{5} + \frac{5}{3}$$

$$D = \frac{1}{2} - \frac{16}{9}$$

$$E = \frac{-6}{7} - \frac{1}{2}$$

$$F = \frac{-9}{5} + \frac{-11}{2}$$

$$G = \frac{-8}{21} + \frac{11}{35}$$

$$H = \frac{-3}{35} - \frac{-13}{10}$$

Exercice 9

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

$$A = \frac{1}{3} \times \frac{7}{5}$$

$$B = \frac{9}{8} \div \frac{1}{9}$$

$$C = \frac{-9}{4} \div \frac{1}{7}$$

$$D = \frac{-7}{2} \times \frac{-1}{10}$$

$$E = \frac{27}{8} \div \frac{3}{8}$$

$$F = \frac{63}{16} \times \frac{20}{27}$$

$$G = \frac{72}{24} \div \frac{54}{-24}$$

$$H = \frac{-7}{-12} \times \frac{6}{49}$$

Exercice 10

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

$$A = \frac{7}{2} \times \frac{5}{4}$$

$$B = \frac{1}{10} \div \frac{1}{7}$$

$$C = \frac{-7}{4} \times \frac{-3}{-4}$$

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

$$E = \frac{16}{27} \div \frac{8}{21}$$

$$F = \frac{35}{18} \times \frac{6}{25}$$

$$G = \frac{-100}{21} \times \frac{18}{-80}$$

$$H = \frac{-9}{64} \div \frac{-90}{-64}$$

Exercice 11

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

$$\begin{array}{l}
 A = \frac{-13}{8} \div \frac{13}{16} + \frac{9}{14} \\
 B = \frac{10}{27} \times \left(\frac{15}{4} + \frac{3}{10} \right)
 \end{array}
 \quad \left| \quad
 \begin{array}{l}
 C = \frac{5}{2} \div \frac{-1}{3} \times \frac{-2}{33} \\
 D = \frac{3}{2} \div \frac{15}{13} \times \frac{15}{7}
 \end{array}
 \quad \left| \quad
 \begin{array}{l}
 E = \frac{9}{10} - \left(\frac{7}{8} + \frac{9}{40} \right) \\
 F = \frac{4}{9} \div \frac{1}{30} + \frac{-7}{30}
 \end{array}$$

Exercice 12

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

$$\begin{array}{l}
 A = \frac{1}{38} - \left(\frac{5}{4} + \frac{-3}{4} \right) \\
 B = \frac{8}{3} \div \frac{-3}{19} + \frac{5}{18}
 \end{array}
 \quad \left| \quad
 \begin{array}{l}
 C = \frac{1}{36} \times \frac{-9}{4} \div \frac{-1}{14} \\
 D = \frac{-13}{3} \div \frac{5}{21} + \frac{-9}{4}
 \end{array}
 \quad \left| \quad
 \begin{array}{l}
 E = \frac{9}{2} \times \frac{-8}{39} \div \frac{6}{17} \\
 F = \frac{-8}{9} \times \frac{-9}{2} \div \frac{-15}{11}
 \end{array}$$

Exercice 13

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

$$\begin{array}{l}
 A = \frac{3}{2} \times \left(\frac{11}{9} - \frac{-5}{3} \right) \\
 B = \frac{-1}{12} - \frac{-7}{6} \times \frac{3}{14}
 \end{array}
 \quad \left| \quad
 \begin{array}{l}
 C = \frac{-11}{10} - \frac{-1}{18} \times \frac{9}{5} \\
 D = \frac{-13}{30} \times \left(\frac{1}{13} + \frac{14}{13} \right)
 \end{array}
 \quad \left| \quad
 \begin{array}{l}
 E = \frac{-5}{16} \div \frac{-3}{8} + \frac{1}{24} \\
 F = \frac{9}{7} \div \frac{-1}{14} - \frac{-2}{5}
 \end{array}$$

Exercice 14

Calculer les expressions suivantes et donner l'écriture scientifique du résultat.

$$A = \frac{0,54 \times 10^6 \times 0,2 \times 10^{-10}}{0,9 \times (10^9)^3} \quad \left| \quad B = \frac{90 \times 10^{-10} \times 600 \times 10^{-4}}{240 \times (10^{-3})^5}$$

Exercice 15

Calculer les expressions suivantes et donner l'écriture scientifique du résultat.

$$A = \frac{0,72 \times 10^2 \times 0,14 \times 10^{-10}}{315 \times (10^{-7})^4} \quad \left| \quad B = \frac{900 \times 10^{-9} \times 2 \times 10^8}{90 \times (10^6)^2}$$

Exercice 16

Calculer les expressions suivantes et donner l'écriture scientifique du résultat.

$$A = \frac{8 \times 10^5 \times 400 \times 10^{-9}}{0,2 \times (10^7)^3} \quad \left| \quad B = \frac{0,64 \times 10^5 \times 700 \times 10^{-10}}{44\,800 \times (10^{-5})^2}$$

Exercice 17

Calculer les expressions suivantes et donner l'écriture scientifique du résultat.

$$A = \frac{2 \times 10^{-7} \times 300 \times 10^9}{1,2 \times (10^5)^5} \quad \left| \quad B = \frac{270 \times 10^9 \times 0,6 \times 10^{10}}{2,4 \times (10^{-8})^3}$$

Exercice 18

Calculer les expressions suivantes et donner l'écriture scientifique du résultat.

$$A = \frac{1,8 \times 10^{-7} \times 2,4 \times 10^{-6}}{288 \times (10^6)^5}$$

$$B = \frac{0,63 \times 10^{-1} \times 0,21 \times 10^{10}}{2\,520 \times (10^{-9})^2}$$

Exercice 1

Effectuer sans calculatrice :

▶1. $-1 \times 4 = -4$

▶2. $3 \times (-4) = -12$

▶3. $6 \times 4 = 24$

▶4. $30 \div 10 = 3$

▶5. $9 + 5 = 14$

▶6. $-36 \div 6 = -6$

▶7. $-2 + 9 = 7$

▶8. $-7 - 2 = -9$

▶9. $-3 \times 10 = -30$

▶10. $-6 - (-3) = -3$

▶11. $10 - 1 = 9$

▶12. $-5 \div (-1) = 5$

▶13. $-9 \div (-9) = 1$

▶14. $5 - (-5) = 10$

▶15. $9 + (-5) = 4$

▶16. $3 \times (-7) = -21$

▶17. $-4 + (-8) = -12$

▶18. $18 \div (-3) = -6$

▶19. $-4 - (-8) = 4$

▶20. $7 + 8 = 15$

Exercice 2

Effectuer sans calculatrice :

▶1. $-4 \times (-10) = 40$

▶2. $16 - 9 = 7$

▶3. $10 + (-10) = 0$

▶4. $7 \times (-8) = -56$

▶5. $-7 - (-2) = -5$

▶6. $-8 + (-4) = -12$

▶7. $-11 - (-5) = -6$

▶8. $0 - 3 = -3$

▶9. $1 + 1 = 2$

▶10. $80 \div (-8) = -10$

▶11. $14 \div (-7) = -2$

▶12. $-2 \times 9 = -18$

▶13. $-36 \div (-6) = 6$

▶14. $-24 \div 6 = -4$

▶15. $5 \times (-10) = -50$

▶16. $-9 \div 1 = -9$

▶17. $-4 \times (-9) = 36$

▶18. $4 - 3 = 1$

▶19. $9 + (-9) = 0$

▶20. $6 + (-8) = -2$

Exercice 3

Effectuer sans calculatrice :

▶1. $-90 \div 10 = -9$

▶2. $-1 \times 10 = -10$

▶3. $4 + 2 = 6$

▶4. $-5 + (-2) = -7$

▶5. $8 \times (-9) = -72$

▶6. $7 - 5 = 2$

▶7. $-4 - 2 = -6$

▶8. $-4 \times (-10) = 40$

▶9. $9 \times (-9) = -81$

▶10. $-5 - (-7) = 2$

▶11. $18 \div 9 = 2$

▶12. $-81 \div 9 = -9$

▶13. $4 + 1 = 5$

▶14. $8 + (-4) = 4$

▶15. $-7 \times 10 = -70$

▶16. $-3 - 4 = -7$

▶17. $2 + 5 = 7$

▶18. $-15 \div (-3) = 5$

▶19. $0 - 10 = -10$

▶20. $-100 \div 10 = -10$

Exercice 4

Effectuer sans calculatrice :

▶1. $3 \times (-7) = -21$

▶2. $81 \div (-9) = -9$

▶3. $2 + 1 = 3$

▶4. $-6 \times (-6) = 36$

▶5. $-50 \div (-5) = 10$

▶6. $-7 + (-1) = -8$

▶7. $-2 + (-2) = -4$

▶8. $1 - 3 = -2$

▶9. $7 \times (-3) = -21$

▶10. $13 - 3 = 10$

▶11. $10 + 2 = 12$

▶12. $-17 - (-7) = -10$

▶13. $10 \times (-1) = -10$

▶14. $-3 - 2 = -5$

▶15. $7 - 1 = 6$

▶16. $-24 \div (-6) = 4$

▶17. $45 \div 9 = 5$

▶18. $-3 \times 9 = -27$

▶19. $-4 \div 2 = -2$

▶20. $4 + 2 = 6$

Exercice 5

Effectuer sans calculatrice :

- 1. $1 - (-3) = 4$
 ►2. $7 + (-2) = 5$
 ►3. $5 \times 3 = 15$
 ►4. $0 - 3 = -3$
 ►5. $4 + 2 = 6$
 ►6. $-9 + (-7) = -16$
 ►7. $50 \div (-5) = -10$

- 8. $9 \times 2 = 18$
 ►9. $-6 - (-7) = 1$
 ►10. $-6 - 2 = -8$
 ►11. $4 \times (-9) = -36$
 ►12. $30 \div (-10) = -3$
 ►13. $50 \div (-5) = -10$
 ►14. $8 + (-8) = 0$

- 15. $-6 \div 1 = -6$
 ►16. $3 - 8 = -5$
 ►17. $3 \times (-7) = -21$
 ►18. $15 \div 3 = 5$
 ►19. $3 + (-4) = -1$
 ►20. $-4 \times (-3) = 12$

Corrigé de l'exercice 6

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

$$A = \frac{3}{4} + \frac{7}{12}$$

$$A = \frac{3 \times 3}{4 \times 3} + \frac{7}{12}$$

$$A = \frac{16}{12}$$

$$A = \frac{4 \times 4}{3 \times 4}$$

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

$$B = \frac{13}{24} - \frac{13}{6}$$

$$B = \frac{13}{24} - \frac{13 \times 4}{6 \times 4}$$

$$B = \frac{-39}{24}$$

$$B = \frac{-13 \times 3}{8 \times 3}$$

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

$$C = \frac{9}{5} - \frac{10}{3}$$

$$C = \frac{9 \times 3}{5 \times 3} - \frac{10 \times 5}{3 \times 5}$$

$$C = \frac{-23}{15}$$

$$D = \frac{4}{3} + \frac{9}{5}$$

$$D = \frac{4 \times 5}{3 \times 5} + \frac{9 \times 3}{5 \times 3}$$

$$D = \frac{47}{15}$$

$$E = \frac{-13}{5} - \frac{14}{3}$$

$$E = \frac{-13 \times 3}{5 \times 3} - \frac{14 \times 5}{3 \times 5}$$

$$E = \frac{-109}{15}$$

$$F = \frac{-7}{2} + \frac{-12}{5}$$

$$F = \frac{-7 \times 5}{2 \times 5} + \frac{-12 \times 2}{5 \times 2}$$

$$F = \frac{-59}{10}$$

$$G = \frac{-11}{10} - \frac{-5}{4}$$

$$G = \frac{-11 \times 2}{10 \times 2} - \frac{-5 \times 5}{4 \times 5}$$

$$G = \frac{3}{20}$$

$$H = \frac{-2}{21} + \frac{1}{6}$$

$$H = \frac{-2 \times 2}{21 \times 2} + \frac{1 \times 7}{6 \times 7}$$

$$H = \frac{3}{42}$$

$$H = \frac{1 \times 3}{14 \times 3}$$

$$H = \frac{1}{14}$$

Corrigé de l'exercice 7

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

$$A = \frac{3}{16} + \frac{7}{4}$$

$$A = \frac{3}{16} + \frac{7 \times 4}{4 \times 4}$$

$$A = \frac{31}{16}$$

$$B = \frac{5}{6} - 14$$

$$B = \frac{5}{6} - \frac{14 \times 6}{1 \times 6}$$

$$B = \frac{-79}{6}$$

$$C = \frac{2}{3} + \frac{13}{2}$$

$$C = \frac{2 \times 2}{3 \times 2} + \frac{13 \times 3}{2 \times 3}$$

$$C = \frac{43}{6}$$

$$D = \frac{11}{4} - \frac{6}{5}$$

$$D = \frac{11 \times 5}{4 \times 5} - \frac{6 \times 4}{5 \times 4}$$

$$D = \frac{31}{20}$$

$$E = \frac{9}{4} - \frac{-5}{3}$$

$$E = \frac{9 \times 3}{4 \times 3} - \frac{-5 \times 4}{3 \times 4}$$

$$E = \frac{47}{12}$$

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

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

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

$$G = \frac{-11}{4} - \frac{-7}{10}$$

$$G = \frac{-11 \times 5}{4 \times 5} - \frac{-7 \times 2}{10 \times 2}$$

$$G = \frac{-41}{20}$$

$$H = \frac{-11}{9} + \frac{-13}{6}$$

$$H = \frac{-11 \times 2}{9 \times 2} + \frac{-13 \times 3}{6 \times 3}$$

$$H = \frac{-61}{18}$$

Corrigé de l'exercice 8

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

$$A = \frac{1}{6} - \frac{5}{18}$$

$$A = \frac{1 \times 3}{6 \times 3} - \frac{5}{18}$$

$$A = \frac{-2}{18}$$

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

$$A = \frac{-1}{9}$$

$$B = 7 + \frac{11}{8}$$

$$B = \frac{7 \times 8}{1 \times 8} + \frac{11}{8}$$

$$B = \frac{67}{8}$$

$$C = \frac{13}{5} + \frac{5}{3}$$

$$C = \frac{13 \times 3}{5 \times 3} + \frac{5 \times 5}{3 \times 5}$$

$$C = \frac{64}{15}$$

$$D = \frac{1}{2} - \frac{16}{9}$$

$$D = \frac{1 \times 9}{2 \times 9} - \frac{16 \times 2}{9 \times 2}$$

$$D = \frac{-23}{18}$$

$$E = \frac{-6}{7} - \frac{1}{2}$$

$$E = \frac{-6 \times 2}{7 \times 2} - \frac{1 \times 7}{2 \times 7}$$

$$E = \frac{-19}{14}$$

$$F = \frac{-9}{5} + \frac{-11}{2}$$

$$F = \frac{-9 \times 2}{5 \times 2} + \frac{-11 \times 5}{2 \times 5}$$

$$F = \frac{-73}{10}$$

$$G = \frac{-8}{21} + \frac{11}{35}$$

$$G = \frac{-8 \times 5}{21 \times 5} + \frac{11 \times 3}{35 \times 3}$$

$$G = \frac{-7}{105}$$

$$G = \frac{-1 \times 7}{15 \times 7}$$

$$G = \frac{-1}{15}$$

$$H = \frac{-3}{35} - \frac{-13}{10}$$

$$H = \frac{-3 \times 2}{35 \times 2} - \frac{-13 \times 7}{10 \times 7}$$

$$H = \frac{85}{70}$$

$$H = \frac{17 \times 5}{14 \times 5}$$

$$H = \frac{17}{14}$$

Corrigé de l'exercice 9

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

$$A = \frac{1}{3} \times \frac{7}{5}$$

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

$$B = \frac{9}{8} \div \frac{1}{9}$$

$$B = \frac{9}{8} \times 9$$

$$B = \frac{81}{8}$$

$$C = \frac{-9}{4} \div \frac{1}{7}$$

$$C = \frac{-9}{4} \times 7$$

$$C = \frac{-63}{4}$$

$$D = \frac{-7}{2} \times \frac{-1}{10}$$

$$D = \frac{7}{20}$$

$$E = \frac{27}{8} \div \frac{3}{8}$$

$$E = \frac{27}{8} \times \frac{8}{3}$$

$$E = \frac{9 \times \cancel{3}}{1 \times \cancel{8}} \times \frac{1 \times \cancel{8}}{1 \times \cancel{3}}$$

$$E = 9$$

$$F = \frac{63}{16} \times \frac{20}{27}$$

$$F = \frac{7 \times \cancel{9}}{4 \times \cancel{4}} \times \frac{5 \times \cancel{4}}{3 \times \cancel{9}}$$

$$F = \frac{35}{12}$$

$$G = \frac{72}{24} \div \frac{54}{-24}$$

$$G = \frac{72}{24} \times \frac{-24}{54}$$

$$G = \frac{3 \times \cancel{24}}{1 \times \cancel{24}} \times \frac{-4 \times \cancel{6}}{9 \times \cancel{6}}$$

$$G = 3 \times \frac{-4}{9}$$

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

$$G = \frac{-4}{3}$$

$$H = \frac{-7}{-12} \times \frac{6}{49}$$

$$H = \frac{1 \times \cancel{7}}{2 \times \cancel{6}} \times \frac{1 \times \cancel{6}}{7 \times \cancel{7}}$$

$$H = \frac{1}{14}$$

Corrigé de l'exercice 10

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

$$A = \frac{7}{2} \times \frac{5}{4}$$

$$A = \frac{35}{8}$$

$$B = \frac{1}{10} \div \frac{1}{7}$$

$$B = \frac{1}{10} \times 7$$

$$B = \frac{7}{10}$$

$$C = \frac{-7}{4} \times \frac{-3}{-4}$$

$$C = \frac{-21}{16}$$

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

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

$$D = \frac{-10}{3}$$

$$E = \frac{16}{27} \div \frac{8}{21}$$

$$E = \frac{16}{27} \times \frac{21}{8}$$

$$E = \frac{2 \times \cancel{8}}{9 \times \cancel{3}} \times \frac{7 \times \cancel{3}}{1 \times \cancel{8}}$$

$$E = \frac{14}{9}$$

$$F = \frac{35}{18} \times \frac{6}{25}$$

$$F = \frac{7 \times \cancel{5}}{3 \times \cancel{6}} \times \frac{1 \times \cancel{6}}{5 \times \cancel{5}}$$

$$F = \frac{7}{15}$$

$$G = \frac{-100}{21} \times \frac{18}{-80}$$

$$G = \frac{-100}{21} \times \frac{9 \times \cancel{2}}{-40 \times \cancel{2}}$$

$$G = \frac{-100}{21} \times \frac{-9}{40}$$

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

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

$$H = \frac{-9}{64} \div \frac{-90}{-64}$$

$$H = \frac{-9}{64} \times \frac{64}{90}$$

$$H = \frac{-9}{64} \times \frac{32 \times \cancel{2}}{45 \times \cancel{2}}$$

$$H = \frac{-9}{64} \times \frac{32}{45}$$

$$H = \frac{-1 \times \cancel{9}}{2 \times \cancel{32}} \times \frac{1 \times \cancel{32}}{5 \times \cancel{9}}$$

$$H = \frac{-1}{10}$$

Corrigé de l'exercice 11

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

$$A = \frac{-13}{8} \div \frac{13}{16} + \frac{9}{14}$$

$$A = \frac{-13}{8} \times \frac{16}{13} + \frac{9}{14}$$

$$A = \frac{-1 \times \cancel{13}}{1 \times \cancel{8}} \times \frac{2 \times \cancel{8}}{1 \times \cancel{13}} + \frac{9}{14}$$

$$A = -2 + \frac{9}{14}$$

$$A = \frac{-2 \times 14}{1 \times 14} + \frac{9}{14}$$

$$A = \frac{-19}{14}$$

$$B = \frac{10}{27} \times \left(\frac{15}{4} + \frac{3}{10} \right)$$

$$B = \frac{10}{27} \times \left(\frac{15 \times 5}{4 \times 5} + \frac{3 \times 2}{10 \times 2} \right)$$

$$B = \frac{10}{27} \times \frac{81}{20}$$

$$B = \frac{1 \times \cancel{10}}{1 \times \cancel{27}} \times \frac{3 \times \cancel{27}}{2 \times \cancel{10}}$$

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

$$C = \frac{5}{2} \div \frac{-1}{3} \times \frac{-2}{33}$$

$$C = \frac{5}{2} \times -3 \times \frac{-2}{33}$$

$$C = \frac{-15}{2} \times \frac{-2}{33}$$

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

$$C = \frac{5}{11}$$

$$D = \frac{3}{2} \div \frac{15}{13} \times \frac{15}{7}$$

$$D = \frac{3}{2} \times \frac{13}{15} \times \frac{15}{7}$$

$$D = \frac{1 \times \cancel{3}}{2} \times \frac{13}{5 \times \cancel{3}} \times \frac{15}{7}$$

$$D = \frac{13}{10} \times \frac{15}{7}$$

$$D = \frac{13}{2 \times \cancel{5}} \times \frac{3 \times \cancel{5}}{7}$$

$$D = \frac{39}{14}$$

$$E = \frac{9}{10} - \left(\frac{7}{8} + \frac{9}{40} \right)$$

$$E = \frac{9}{10} - \left(\frac{7 \times 5}{8 \times 5} + \frac{9}{40} \right)$$

$$E = \frac{9}{10} - \frac{44}{40}$$

$$E = \frac{9}{10} - \frac{11 \times 4}{10 \times 4}$$

$$E = \frac{9}{10} - \frac{11}{10}$$

$$E = \frac{-2}{10}$$

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

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

$$F = \frac{4}{9} \div \frac{1}{30} + \frac{-7}{30}$$

$$F = \frac{4}{9} \times 30 + \frac{-7}{30}$$

$$F = \frac{4}{3 \times \cancel{3}} \times 10 \times \cancel{3} + \frac{-7}{30}$$

$$F = \frac{40}{3} + \frac{-7}{30}$$

$$F = \frac{40 \times 10}{3 \times 10} + \frac{-7}{30}$$

$$F = \frac{393}{30}$$

$$F = \frac{131 \times 3}{10 \times 3}$$

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

Corrigé de l'exercice 12

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

$$A = \frac{1}{38} - \left(\frac{5}{4} + \frac{-3}{4} \right)$$

$$A = \frac{1}{38} - \frac{2}{4}$$

$$A = \frac{1}{38} - \frac{1 \times 2}{2 \times 2}$$

$$A = \frac{1}{38} - \frac{1}{2}$$

$$A = \frac{1}{38} - \frac{1 \times 19}{2 \times 19}$$

$$A = \frac{-18}{38}$$

$$A = \frac{-9 \times 2}{19 \times 2}$$

$$A = \frac{-9}{19}$$

$$B = \frac{8}{3} \div \frac{-3}{19} + \frac{5}{18}$$

$$B = \frac{8}{3} \times \frac{-19}{3} + \frac{5}{18}$$

$$B = \frac{-152}{9} + \frac{5}{18}$$

$$B = \frac{-152 \times 2}{9 \times 2} + \frac{5}{18}$$

$$B = \frac{-299}{18}$$

$$C = \frac{1}{36} \times \frac{-9}{4} \div \frac{-1}{14}$$

$$C = \frac{1}{4 \times 9} \times \frac{-1 \times 9}{4} \div \frac{-1}{14}$$

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

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

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

$$C = \frac{7}{8}$$

$$D = \frac{-13}{3} \div \frac{5}{21} + \frac{-9}{4}$$

$$D = \frac{-13}{3} \times \frac{21}{5} + \frac{-9}{4}$$

$$D = \frac{-13}{1 \times 3} \times \frac{7 \times 3}{5} + \frac{-9}{4}$$

$$D = \frac{-91}{5} + \frac{-9}{4}$$

$$D = \frac{-91 \times 4}{5 \times 4} + \frac{-9 \times 5}{4 \times 5}$$

$$D = \frac{-409}{20}$$

$$E = \frac{9}{2} \times \frac{-8}{39} \div \frac{6}{17}$$

$$E = \frac{3 \times 3}{1 \times 2} \times \frac{-4 \times 2}{13 \times 3} \div \frac{6}{17}$$

$$E = \frac{-12}{13} \div \frac{6}{17}$$

$$E = \frac{-12}{13} \times \frac{17}{6}$$

$$E = \frac{-2 \times 6}{13} \times \frac{17}{1 \times 6}$$

$$E = \frac{-34}{13}$$

$$F = \frac{-8}{9} \times \frac{-9}{2} \div \frac{-15}{11}$$

$$F = \frac{-4 \times 2}{1 \times 9} \times \frac{-1 \times 9}{1 \times 2} \div \frac{-15}{11}$$

$$F = 4 \div \frac{-15}{11}$$

$$F = 4 \times \frac{-11}{15}$$

$$F = \frac{-44}{15}$$

Corrigé de l'exercice 13

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

$$A = \frac{3}{2} \times \left(\frac{11}{9} - \frac{-5}{3} \right)$$

$$A = \frac{3}{2} \times \left(\frac{11}{9} - \frac{-5 \times 3}{3 \times 3} \right)$$

$$A = \frac{3}{2} \times \frac{26}{9}$$

$$A = \frac{1 \times 3}{1 \times 2} \times \frac{13 \times 2}{3 \times 3}$$

$$A = \frac{13}{3}$$

$$B = \frac{-1}{12} - \frac{-7}{6} \times \frac{3}{14}$$

$$B = \frac{-1}{12} - \frac{-1 \times 7}{2 \times 3} \times \frac{1 \times 3}{2 \times 7}$$

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

$$B = \frac{-1}{12} - \frac{-1 \times 3}{4 \times 3}$$

$$B = \frac{2}{12}$$

$$B = \frac{1 \times 2}{6 \times 2}$$

$$B = \frac{1}{6}$$

$$C = \frac{-11}{10} - \frac{-1}{18} \times \frac{9}{5}$$

$$C = \frac{-11}{10} - \frac{-1}{2 \times 9} \times \frac{1 \times 9}{5}$$

$$C = \frac{-11}{10} - \frac{-1}{10}$$

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

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

$$C = -1$$

$$D = \frac{-13}{30} \times \left(\frac{1}{13} + \frac{14}{13} \right)$$

$$D = \frac{-13}{30} \times \frac{15}{13}$$

$$D = \frac{-1 \times 13}{2 \times 15} \times \frac{1 \times 15}{1 \times 13}$$

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

$$E = \frac{-5}{16} \div \frac{-3}{8} + \frac{1}{24}$$

$$E = \frac{-5}{16} \times \frac{-8}{3} + \frac{1}{24}$$

$$E = \frac{-5}{2 \times 8} \times \frac{-1 \times 8}{3} + \frac{1}{24}$$

$$E = \frac{5}{6} + \frac{1}{24}$$

$$E = \frac{5 \times 4}{6 \times 4} + \frac{1}{24}$$

$$E = \frac{21}{24}$$

$$E = \frac{7 \times 3}{8 \times 3}$$

$$E = \frac{7}{8}$$

$$F = \frac{9}{7} \div \frac{-1}{14} - \frac{-2}{5}$$

$$F = \frac{9}{7} \times -14 - \frac{-2}{5}$$

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

$$F = -18 - \frac{-2}{5}$$

$$F = \frac{-18 \times 5}{1 \times 5} - \frac{-2}{5}$$

$$F = \frac{-88}{5}$$

Corrigé de l'exercice 14

Calculer les expressions suivantes et donner l'écriture scientifique du résultat.

$$A = \frac{0,54 \times 10^6 \times 0,2 \times 10^{-10}}{0,9 \times (10^9)^3}$$

$$A = \frac{0,54 \times 0,2}{0,9} \times \frac{10^{6+(-10)}}{10^{9 \times 3}}$$

$$A = 0,12 \times 10^{-4-27}$$

$$A = 1,2 \times 10^{-1} \times 10^{-31}$$

$$A = 1,2 \times 10^{-32}$$

$$B = \frac{90 \times 10^{-10} \times 600 \times 10^{-4}}{240 \times (10^{-3})^5}$$

$$B = \frac{90 \times 600}{240} \times \frac{10^{-10+(-4)}}{10^{-3 \times 5}}$$

$$B = 225 \times 10^{-14-(-15)}$$

$$B = 2,25 \times 10^2 \times 10^1$$

$$B = 2,25 \times 10^3$$

Corrigé de l'exercice 15

Calculer les expressions suivantes et donner l'écriture scientifique du résultat.

$$A = \frac{0,72 \times 10^2 \times 0,14 \times 10^{-10}}{315 \times (10^{-7})^4}$$

$$A = \frac{0,72 \times 0,14}{315} \times \frac{10^{2+(-10)}}{10^{-7 \times 4}}$$

$$A = 0,00032 \times 10^{-8-(-28)}$$

$$A = 3,2 \times 10^{-4} \times 10^{20}$$

$$A = 3,2 \times 10^{16}$$

$$B = \frac{900 \times 10^{-9} \times 2 \times 10^8}{90 \times (10^6)^2}$$

$$B = \frac{900 \times 2}{90} \times \frac{10^{-9+8}}{10^{6 \times 2}}$$

$$B = 20 \times 10^{-1-12}$$

$$B = 2 \times 10^1 \times 10^{-13}$$

$$B = 2 \times 10^{-12}$$

Corrigé de l'exercice 16

Calculer les expressions suivantes et donner l'écriture scientifique du résultat.

$$A = \frac{8 \times 10^5 \times 400 \times 10^{-9}}{0,2 \times (10^7)^3}$$

$$A = \frac{8 \times 400}{0,2} \times \frac{10^{5+(-9)}}{10^{7 \times 3}}$$

$$A = 16\,000 \times 10^{-4-21}$$

$$A = 1,6 \times 10^4 \times 10^{-25}$$

$$A = 1,6 \times 10^{-21}$$

$$B = \frac{0,64 \times 10^5 \times 700 \times 10^{-10}}{44\,800 \times (10^{-5})^2}$$

$$B = \frac{0,64 \times 700}{44\,800} \times \frac{10^{5+(-10)}}{10^{-5 \times 2}}$$

$$B = 0,01 \times 10^{-5-(-10)}$$

$$B = 1 \times 10^{-2} \times 10^5$$

$$B = 1 \times 10^3$$

Corrigé de l'exercice 17

Calculer les expressions suivantes et donner l'écriture scientifique du résultat.

$$A = \frac{2 \times 10^{-7} \times 300 \times 10^9}{1,2 \times (10^5)^5}$$

$$A = \frac{2 \times 300}{1,2} \times \frac{10^{-7+9}}{10^{5 \times 5}}$$

$$A = 500 \times 10^{2-25}$$

$$A = 5 \times 10^2 \times 10^{-23}$$

$$A = 5 \times 10^{-21}$$

$$B = \frac{270 \times 10^9 \times 0,6 \times 10^{10}}{2,4 \times (10^{-8})^3}$$

$$B = \frac{270 \times 0,6}{2,4} \times \frac{10^{9+10}}{10^{-8 \times 3}}$$

$$B = 67,5 \times 10^{19-(-24)}$$

$$B = 6,75 \times 10^1 \times 10^{43}$$

$$B = 6,75 \times 10^{44}$$

Corrigé de l'exercice 18

Calculer les expressions suivantes et donner l'écriture scientifique du résultat.

$$A = \frac{1,8 \times 10^{-7} \times 2,4 \times 10^{-6}}{288 \times (10^6)^5}$$

$$A = \frac{1,8 \times 2,4}{288} \times \frac{10^{-7+(-6)}}{10^{6 \times 5}}$$

$$A = 0,015 \times 10^{-13-30}$$

$$A = 1,5 \times 10^{-2} \times 10^{-43}$$

$$A = 1,5 \times 10^{-45}$$

$$B = \frac{0,63 \times 10^{-1} \times 0,21 \times 10^{10}}{2\,520 \times (10^{-9})^2}$$

$$B = \frac{0,63 \times 0,21}{2\,520} \times \frac{10^{-1+10}}{10^{-9 \times 2}}$$

$$B = 5,25 \cdot 10^{-05} \times 10^{9-(-18)}$$

$$B = 5,25 \times 10^{-5} \times 10^{27}$$

$$B = 5,25 \times 10^{22}$$