

Exercice 1 :

$$A = \frac{23}{30} - \frac{8}{15} + \frac{7}{20} \qquad B = \frac{-5}{7} + \frac{2}{3} \times \frac{9}{-4} \qquad C = \frac{6}{5} \times \left(\frac{1}{4} - \frac{1}{3} \right) \qquad D = \frac{-3}{7}$$

$$A = \frac{23 \times 2}{30 \times 2} - \frac{8 \times 4}{15 \times 4} + \frac{7 \times 3}{20 \times 3} \qquad B = \frac{-5}{7} + \frac{2 \times 9}{3 \times (-4)} \qquad C = \frac{6}{5} \times \left(\frac{1 \times 3}{4 \times 3} - \frac{1 \times 4}{3 \times 4} \right) \qquad D = \frac{-3}{\frac{7}{1}}$$

$$A = \frac{46}{60} - \frac{32}{60} + \frac{21}{60} \qquad B = \frac{-5}{7} - \frac{2 \times 3 \times 3}{3 \times 2 \times 2} \qquad C = \frac{6}{5} \times \left(\frac{3}{12} - \frac{4}{12} \right) \qquad D = \frac{-3}{7} \times \frac{1}{7}$$

$$A = \frac{46 - 32 + 21}{60} \qquad B = \frac{-5}{7} - \frac{3}{2} \qquad C = \frac{6}{5} \times \left(-\frac{1}{12} \right) \qquad D = \frac{-3 \times 1}{7 \times 7}$$

$$A = \frac{35}{60} \qquad B = \frac{-5 \times 2}{7 \times 2} - \frac{3 \times 7}{2 \times 7} \qquad C = -\frac{6 \times 1}{5 \times 6 \times 2} \qquad D = \frac{-3}{49}$$

$$A = \frac{5 \times 7}{5 \times 12} \qquad B = \frac{-10}{14} - \frac{21}{14} \qquad C = -\frac{1}{5 \times 2}$$

$$A = \frac{7}{12} \qquad B = \frac{-31}{14} \qquad C = -\frac{1}{10}$$

$$E = \frac{\frac{20}{21}}{\frac{4}{9}} \qquad F = \frac{5}{\frac{4}{15}} \qquad G = \frac{3}{1 - \frac{2}{3}} \qquad H = 1 - \frac{3}{8} \left(\frac{1}{4} - \frac{5}{6} \right)$$

$$E = \frac{20}{21} \times \frac{9}{4} \qquad F = 5 \times \frac{15}{4} \qquad G = \frac{3}{\frac{3}{3} - \frac{2}{3}} \qquad H = 1 - \frac{3}{8} \left(\frac{3}{12} - \frac{10}{12} \right)$$

$$E = \frac{20 \times 9}{21 \times 4} \qquad F = \frac{5 \times 15}{4} \qquad G = \frac{3}{\frac{1}{3}} \qquad H = 1 - \frac{3}{8} \times \left(-\frac{7}{12} \right)$$

$$E = \frac{5 \times 4 \times 3 \times 3}{7 \times 3 \times 4} \qquad F = \frac{75}{4} \qquad G = 3 \times \frac{3}{1} \qquad H = 1 + \frac{3 \times 7}{8 \times 12}$$

$$E = \frac{5 \times 3}{7} \qquad G = \frac{3 \times 3}{1} \qquad H = 1 + \frac{3 \times 7}{8 \times 4 \times 3}$$

$$E = \frac{15}{7} \qquad G = \frac{9}{1} \qquad H = 1 + \frac{7}{8 \times 4}$$

$$G = 9 \qquad H = \frac{32}{32} + \frac{7}{32} = \frac{39}{32}$$

Exercise 2 :

$$A = \left(\frac{2}{3} - \frac{1}{2} \right) \div \left(\frac{1}{3} - \frac{1}{4} \right)$$

$$A = \left(\frac{2 \times 2}{3 \times 2} - \frac{1 \times 3}{2 \times 3} \right) \div \left(\frac{1 \times 4}{3 \times 4} - \frac{1 \times 3}{4 \times 3} \right)$$

$$A = \left(\frac{4}{6} - \frac{3}{6} \right) \div \left(\frac{4}{12} - \frac{3}{12} \right)$$

$$A = \frac{1}{6} \div \frac{1}{12}$$

$$A = \frac{1}{6} \times \frac{12}{1}$$

$$A = \frac{12}{6} = 2$$

$$B = -\frac{3}{5} + \frac{2}{3} \times \frac{-3}{5} - \frac{36}{4}$$

$$B = -\frac{3}{5} - \frac{2 \times 3}{3 \times 5} - \frac{9 \times 4}{4 \times 1}$$

$$B = -\frac{3}{5} - \frac{3}{5} - \frac{9}{1}$$

$$B = -\frac{5}{5} - \frac{9}{1}$$

$$B = -1 - 9$$

$$B = -10$$

$$C = -3 + 5 - (-6) \times (-2) - 3 + (+2)$$

$$C = -3 + 5 - (+12) - 3 + 2$$

$$C = -3 + 5 - 12 - 3 + 2$$

$$C = +5 + 2 - 3 - 12 - 3$$

$$C = +7 - 18$$

$$C = -11$$

$$D = \frac{9}{3} - \frac{8}{3} \div \frac{16}{27}$$

$$E = \frac{7}{2} - \frac{4}{2} \times \frac{6}{8}$$

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

$$G = -\frac{5}{12} + \frac{7}{18} - 1$$

$$D = \frac{9}{3} - \frac{8}{3} \times \frac{27}{16}$$

$$E = \frac{7}{2} - \frac{4 \times 6}{2 \times 8}$$

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

$$G = -\frac{5 \times 3}{12 \times 3} + \frac{7 \times 2}{18 \times 2} - \frac{36}{36}$$

$$D = \frac{9}{3} - \frac{8 \times 27}{3 \times 16}$$

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

$$F = -1 + \frac{\frac{2}{5} - \frac{10}{5}}{\frac{4}{3} - \frac{6}{3}}$$

$$G = -\frac{15}{36} + \frac{14}{36} - \frac{36}{36}$$

$$D = \frac{9}{3} - \frac{8 \times 9 \times 3}{3 \times 8 \times 2}$$

$$E = \frac{7}{2} - \frac{3}{2}$$

$$F = -1 + \frac{\frac{8}{5}}{-\frac{2}{3}}$$

$$G = \frac{-15 + 14 - 36}{36}$$

$$D = \frac{9}{3} - \frac{9}{2}$$

$$E = \frac{4}{2}$$

$$F = -1 + \left(-\frac{8}{5} \right) \times \left(-\frac{3}{2} \right)$$

$$G = \frac{-37}{36}$$

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

$$E = 2$$

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

$$D = \frac{18}{6} - \frac{27}{6}$$

$$F = -1 + \frac{24}{10}$$

$$D = -\frac{9}{6}$$

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

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

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

BONUS :

$$H = \frac{1}{1 + \frac{2}{1 + \frac{1}{2}}} = \frac{1}{1 + \frac{2}{\frac{2}{2} + \frac{1}{2}}} = \frac{1}{1 + \frac{2}{\frac{3}{2}}} = \frac{1}{1 + 2 \times \frac{2}{3}} = \frac{1}{1 + \frac{2 \times 2}{3}} = \frac{1}{\frac{3}{3} + \frac{4}{3}} = \frac{1}{\frac{7}{3}} = \frac{1}{7} = 1 \times \frac{3}{7} = \frac{3}{7}$$