1 😐 أحسب ثم اختزل النتائج :

$$A=\frac{\frac{4}{5}}{\frac{2}{3}}\quad ،\quad B=\frac{\frac{5}{6}+\frac{3}{4}}{\frac{7}{12}}\quad ،\quad C=\frac{\frac{3}{4}-\frac{6}{7}}{\frac{7}{12}+\frac{2}{3}}\quad ،\quad D=\frac{8-2.5}{0.7}\quad ،\quad E=\frac{0.3}{5+\frac{1}{7}}.$$

$$A=\frac{\frac{4}{5}}{\frac{2}{3}}=\frac{4}{5}\times\frac{3}{2}=\frac{4\times3}{5\times2}=\frac{\cancel{4}^{2}\times3}{5\times\cancel{2}^{1}}=\frac{2\times3}{5\times1}=\boxed{\frac{6}{5}}$$

لدينا :
$$\frac{5}{6}+\frac{3}{4}=\frac{5\times\mathbf{2}}{6\times\mathbf{2}}+\frac{3\times\mathbf{3}}{4\times\mathbf{3}}=\frac{10}{12}+\frac{9}{12}=\frac{10+9}{12}=\frac{19}{12}$$

منه :
$$B=\frac{\frac{19}{12}}{\frac{7}{12}}=\frac{19}{12}\times\frac{12}{7}=\frac{19\times12}{12\times7}=\frac{19\times\cancel{12}}{\cancel{12}\times7}=\boxed{\frac{19}{7}}$$

لدينا :
$$\frac{3}{4}-\frac{6}{7}=\frac{3\times\mathbf{7}}{4\times\mathbf{7}}-\frac{6\times\mathbf{4}}{7\times\mathbf{4}}=\frac{21}{28}-\frac{24}{28}=\frac{21-24}{28}=-\frac{3}{28}$$

و
$$\frac{7}{12}+\frac{2}{3}=\frac{7}{12}+\frac{2\times\mathbf{4}}{3\times\mathbf{4}}=\frac{7}{12}+\frac{8}{12}=\frac{7+8}{12}=\frac{15}{12}=\frac{5\times3}{4\times3}=\frac{5\times\cancel{3}}{4\times\cancel{3}}=\frac{5}{4}$$

منه :
$$C=\frac{-\frac{3}{28}}{\frac{5}{4}}=-\frac{3}{28}\times\frac{4}{5}=-\frac{3\times4}{28\times5}=-\frac{3\times\cancel{4}^{1}}{\cancel{28}^{7}\times5}=-\frac{3\times1}{7\times5}=\boxed{-\frac{3}{35}}$$

$$D=\frac{8-2.5}{0.7}=\frac{5.5}{0.7}=\frac{5.5\times\mathbf{10}}{0.7\times\mathbf{10}}=\boxed{\frac{55}{7}}$$

لدينا :
$$5+\frac{1}{7}=\frac{5}{1}+\frac{1}{7}=\frac{5\times\mathbf{7}}{1\times\mathbf{7}}+\frac{1}{7}=\frac{35}{7}+\frac{1}{7}=\frac{35+1}{7}=\frac{36}{7}$$

منه :
$$E=\frac{0.3}{\frac{36}{7}}=\frac{\frac{3}{10}}{\frac{36}{7}}=\frac{3}{10}\times\frac{7}{36}=\frac{3\times7}{10\times36}=\frac{\cancel{3}^{1}\times7}{10\times\cancel{36}^{12}}=\frac{1\times7}{10\times12}=\boxed{\frac{7}{120}}$$

2 😊 أنجز المجاميع التالية ثمّ بسّط النتائج :

$$A=\left(\frac{-5}{-6}\right)+\left(\frac{-3}{+4}\right)\quad ،\quad B=\left(\frac{-7}{+12}\right)+\left(\frac{+1}{-3}\right)\quad ،\quad C=(+4)+\left(\frac{-2}{+3}\right)\quad ،\quad D=\left(\frac{-5}{-9}\right)+\left(\frac{-1}{-6}\right).$$

$$A=\left(+\frac{5}{6}\right)+\left(-\frac{3}{4}\right)=\frac{5}{6}-\frac{3}{4}=\frac{5\times\mathbf{2}}{6\times\mathbf{2}}-\frac{3\times\mathbf{3}}{4\times\mathbf{3}}=\frac{10}{12}-\frac{9}{12}=\frac{10-9}{12}=\boxed{\frac{1}{12}}$$

$$B=\left(-\frac{7}{12}\right)+\left(-\frac{1}{3}\right)=-\frac{7}{12}-\frac{1}{3}=-\frac{7}{12}-\frac{1\times\mathbf{4}}{3\times\mathbf{4}}=-\frac{7}{12}-\frac{4}{12}=\frac{-7-4}{12}=\boxed{-\frac{11}{12}}$$

$$C=4+\left(-\frac{2}{3}\right)=4-\frac{2}{3}=\frac{4}{1}-\frac{2}{3}=\frac{4\times\mathbf{3}}{1\times\mathbf{3}}-\frac{2}{3}=\frac{12}{3}-\frac{2}{3}=\frac{12-2}{3}=\boxed{\frac{10}{3}}$$

$$D=\left(+\frac{5}{9}\right)+\left(+\frac{1}{6}\right)=\frac{5}{9}+\frac{1}{6}=\frac{5\times\mathbf{4}}{9\times\mathbf{4}}+\frac{1\times\mathbf{6}}{6\times\mathbf{6}}=\frac{20}{36}+\frac{6}{36}=\frac{20+6}{36}=\frac{26}{36}=\boxed{\frac{13}{18}}$$

3 😊 أنجز الفروق التالية ثمّ بسّط النتائج :

$$A=\left(\frac{-4}{-7}\right)-\left(\frac{-1}{+3}\right)\quad ،\quad B=\left(\frac{-5}{+6}\right)-\left(\frac{-3}{+4}\right)\quad ،\quad C=\left(\frac{+11}{+12}\right)-\left(\frac{+5}{-8}\right)\quad ،\quad D=\left(\frac{+5}{-12}\right)-\left(\frac{-2}{+9}\right).$$

$$A=\left(+\frac{4}{7}\right)-\left(-\frac{1}{3}\right)=\frac{4}{7}+\frac{1}{3}=\frac{4\times\mathbf{3}}{7\times\mathbf{3}}+\frac{1\times\mathbf{7}}{3\times\mathbf{7}}=\frac{12}{21}+\frac{7}{21}=\frac{12+7}{21}=\boxed{\frac{29}{21}}$$

$$B=\left(-\frac{5}{6}\right)-\left(-\frac{3}{4}\right)=-\frac{5}{6}+\frac{3}{4}=-\frac{5\times\mathbf{2}}{6\times\mathbf{2}}+\frac{3\times\mathbf{3}}{4\times\mathbf{3}}=-\frac{10}{12}+\frac{9}{12}=\frac{-10+9}{12}=\boxed{-\frac{1}{12}}$$

$$C=\left(+\frac{11}{12}\right)-\left(-\frac{5}{8}\right)=\frac{11}{12}+\frac{5}{8}=\frac{11\times\mathbf{2}}{12\times\mathbf{2}}+\frac{5\times\mathbf{3}}{8\times\mathbf{3}}=\frac{22}{24}+\frac{15}{24}=\frac{22+15}{24}=\boxed{\frac{37}{24}}$$

$$D=\left(-\frac{5}{12}\right)-\left(-\frac{2}{9}\right)=-\frac{5}{12}+\frac{2}{9}=-\frac{5\times\mathbf{3}}{12\times\mathbf{3}}+\frac{2\times\mathbf{4}}{9\times\mathbf{4}}=-\frac{15}{36}+\frac{8}{36}=\frac{-15+8}{36}=\boxed{-\frac{7}{36}}$$

4 😊 أنجز الجداءات التالية ثمّ بسّط النتائج :

$$A=\left(\frac{-4}{+5}\right)\times\left(\frac{-7}{-8}\right)\quad ،\quad B=\left(\frac{+5}{-7}\right)\times\left(\frac{-3}{+4}\right)\quad ،\quad C=\left(\frac{+3}{-8}\right)\times\left(\frac{+5}{+9}\right)\quad ،\quad D=\left(\frac{-4}{-7}\right)\times\left(\frac{-5}{-8}\right).$$

$$A=\left(-\frac{4}{5}\right)\times\left(+\frac{7}{8}\right)=-\frac{4\times 7}{5\times 8}=-\frac{\cancel{4}^{1}\times 7}{5\times\cancel{8}^{2}}=-\frac{1\times 7}{5\times 2}=\boxed{-\frac{7}{10}}$$

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

$$C=\left(-\frac{3}{8}\right)\times\left(+\frac{5}{9}\right)=-\frac{3\times 5}{8\times 9}=-\frac{\cancel{3}^{1}\times 5}{8\times\cancel{9}^{3}}=-\frac{1\times 5}{8\times 3}=\boxed{-\frac{5}{24}}$$

$$D=\left(+\frac{4}{7}\right)\times\left(+\frac{5}{8}\right)=+\frac{4\times 5}{7\times 8}=\frac{\cancel{4}^{1}\times 5}{7\times\cancel{8}^{2}}=\frac{1\times 5}{7\times 2}=\boxed{\frac{5}{14}}$$

5 😊 أنجز حواصل القسمة التالية ثمّ بسِّط النتائج :

$A=\left(\frac{-5}{+16}\right):\left(\frac{-7}{+8}\right)$ ، $B=\left(\frac{-4}{-15}\right):\left(\frac{+3}{-5}\right)$ ، $C=\left(\frac{-15}{+7}\right):\left(\frac{-3}{-2}\right)$ ، $D=\left(\frac{+4}{+7}\right):\left(\frac{-5}{-8}\right)$.

$$A=\left(-\frac{5}{16}\right):\left(-\frac{7}{8}\right)=\left(-\frac{5}{16}\right)\times\left(-\frac{8}{7}\right)=+\frac{5\times 8}{16\times 7}=\frac{5\times\cancel{8}^{1}}{\cancel{16}^{2}\times 7}=\frac{5\times 1}{2\times 7}=\boxed{\frac{5}{14}}$$

$$B=\left(+\frac{4}{15}\right):\left(-\frac{3}{5}\right)=\left(+\frac{4}{15}\right)\times\left(-\frac{5}{3}\right)=-\frac{4\times 5}{15\times 3}=-\frac{4\times\cancel{5}^{1}}{\cancel{15}^{3}\times 3}=-\frac{4\times 1}{3\times 3}=\boxed{-\frac{4}{9}}$$

$$C=\left(-\frac{15}{7}\right):\left(+\frac{3}{2}\right)=\left(-\frac{15}{7}\right)\times\left(+\frac{2}{3}\right)=-\frac{15\times 2}{7\times 3}=-\frac{\cancel{15}^{5}\times 2}{7\times\cancel{3}^{1}}=-\frac{5\times 2}{7\times 1}=\boxed{-\frac{10}{7}}$$

$$D=\left(+\frac{4}{7}\right):\left(+\frac{5}{8}\right)=\left(+\frac{4}{7}\right)\times\left(+\frac{8}{5}\right)=+\frac{4\times 8}{7\times 5}=\boxed{\frac{32}{35}}$$

6 ☹ أحسب ثم اختزل النتائج :

$A=\dfrac{-\frac{2}{7}+1+\frac{1}{21}}{\frac{5}{6}-\frac{1}{3}-\frac{5}{9}}$ ، $B=\dfrac{\frac{5}{2}-6-\frac{11}{8}}{-1+\frac{4}{15}+\frac{1}{12}}$ ، $C=\dfrac{2-\frac{4}{5}-\frac{3}{2}}{\frac{13}{6}-\frac{3}{4}+\frac{1}{3}}$.

عندما تكون الحسابات المطلوبة معقدة، يُستحسن تفكيكها إلى حسابات أبسط. هنا، نحسب البسط و المقام كلاً على حدى :

لدينا :
$$-\frac{2}{7}+1+\frac{1}{21}=-\frac{2\times\mathbf{3}}{7\times\mathbf{3}}+\frac{1\times\mathbf{21}}{1\times\mathbf{21}}+\frac{1}{21}=-\frac{6}{21}+\frac{21}{21}+\frac{1}{21}=\frac{-6+21+1}{21}=\frac{16}{21}$$

و
$$\frac{5}{6}-\frac{1}{3}-\frac{5}{9}=\frac{5\times\mathbf{3}}{6\times\mathbf{3}}-\frac{1\times\mathbf{6}}{3\times\mathbf{6}}-\frac{5\times\mathbf{2}}{9\times\mathbf{2}}=\frac{15}{18}-\frac{6}{18}-\frac{10}{18}=\frac{15-6-10}{18}=-\frac{1}{18}$$

منه :
$$A=\frac{\frac{16}{21}}{-\frac{1}{18}}=\frac{16}{21}\times(-18)=-\frac{16\times 18}{21}=-\frac{16\times\cancel{3}^{6}}{\cancel{21}^{7}}=-\frac{16\times 6}{7}=\boxed{-\frac{96}{7}}$$

بالمثل :
$$\frac{5}{2}-6-\frac{11}{8}=\frac{5\times\mathbf{4}}{2\times\mathbf{4}}-\frac{6\times\mathbf{8}}{1\times\mathbf{8}}-\frac{11}{8}=\frac{20}{8}-\frac{48}{8}-\frac{11}{8}=\frac{20-48-11}{8}=-\frac{39}{8}$$

و
$$-1+\frac{4}{15}+\frac{1}{12}=-\frac{1\times\mathbf{60}}{1\times\mathbf{60}}+\frac{4\times\mathbf{4}}{15\times\mathbf{4}}+\frac{1\times\mathbf{5}}{12\times\mathbf{5}}=\frac{-60+16+5}{60}=-\frac{39}{60}$$

منه :
$$B=\frac{-\frac{39}{8}}{-\frac{39}{60}}=\left(-\frac{39}{8}\right)\times\left(-\frac{60}{39}\right)=+\frac{39\times 60}{8\times 39}=\frac{\cancel{39}\times\cancel{60}^{15}}{\cancel{8}^{2}\times\cancel{39}}=\frac{1\times 15}{2\times 1}=\boxed{\frac{15}{2}}$$

أيضاً :
$$2-\frac{4}{5}-\frac{3}{2}=\frac{2\times\mathbf{10}}{1\times\mathbf{10}}-\frac{4\times\mathbf{2}}{5\times\mathbf{2}}-\frac{3\times\mathbf{5}}{2\times\mathbf{5}}=\frac{20}{10}-\frac{8}{10}-\frac{15}{10}=\frac{20-8-15}{21}=-\frac{3}{10}$$

و
$$\frac{13}{6}-\frac{3}{4}+\frac{1}{3}=\frac{13\times\mathbf{2}}{6\times\mathbf{2}}-\frac{3\times\mathbf{3}}{4\times\mathbf{3}}+\frac{1\times\mathbf{4}}{3\times\mathbf{4}}=\frac{26}{12}-\frac{9}{12}+\frac{4}{12}=\frac{26-9+4}{12}=\frac{21}{12}=\frac{7}{4}$$

منه :
$$C=\frac{-\frac{3}{10}}{\frac{7}{4}}=\left(-\frac{3}{10}\right)\times\left(\frac{4}{7}\right)=-\frac{3\times\cancel{4}^{2}}{\cancel{10}^{5}\times 7}=-\frac{3\times 2}{5\times 7}=\boxed{-\frac{6}{35}}$$

7 😬 أحسب ثم اختزل النتائج :

$A=\dfrac{\frac{1}{4}+\frac{1}{5}+5-\frac{8+\frac{2}{3}-\frac{1}{6}}{20}}{\frac{13}{12}-\frac{5}{3}-6}$ ، $B=\dfrac{\frac{4+\frac{1}{3}+\frac{1}{5}}{6}-\frac{5+\frac{5}{9}-\frac{4}{3}}{10}}{-1+\frac{1}{2}-\frac{3}{4}}$ ،

$C=\dfrac{\frac{3}{5}-\frac{1}{2}}{3-\frac{1}{4}}\times\dfrac{\frac{1}{6}+\frac{2}{9}}{\frac{3}{8}-1}\times\dfrac{-8+\frac{5}{2}}{1-\frac{3}{10}}$ ، $D=\dfrac{\frac{11}{12}+\frac{1}{8}}{3-\frac{3}{7}}\times\dfrac{-2+\frac{2}{9}}{\frac{5}{6}-\frac{3}{2}}\times\dfrac{2+\frac{3}{7}}{4-\frac{2}{9}}$.

نكتب $A=\dfrac{\frac{a}{2}-\frac{b}{20}}{c}$ حيث $a=\dfrac{1}{4}+\dfrac{1}{5}+5$ ، $b=8+\dfrac{2}{3}-\dfrac{1}{6}$ و $c=\dfrac{13}{12}-\dfrac{5}{3}-6$.

لدينا : $a=\dfrac{1}{4}+\dfrac{1}{5}+5=\dfrac{1\times\mathbf{5}}{4\times\mathbf{5}}+\dfrac{1\times\mathbf{4}}{5\times\mathbf{4}}+\dfrac{5\times\mathbf{20}}{20}=\dfrac{5}{20}+\dfrac{4}{20}+\dfrac{100}{20}=\dfrac{5+4+100}{20}=\dfrac{109}{20}$

منه : $\dfrac{a}{2}=\dfrac{\frac{109}{20}}{2}=\dfrac{109}{20\times2}=\dfrac{109}{40}$

و $b=8+\dfrac{2}{3}-\dfrac{1}{6}=\dfrac{8\times\mathbf{6}}{1\times\mathbf{6}}+\dfrac{2\times\mathbf{2}}{3\times\mathbf{2}}-\dfrac{1}{6}=\dfrac{48}{6}+\dfrac{4}{6}-\dfrac{1}{6}=\dfrac{48+4-1}{6}=\dfrac{51}{6}=\dfrac{17}{2}$

منه : $\dfrac{b}{20}=\dfrac{\frac{17}{2}}{20}=\dfrac{17}{2\times20}=\dfrac{17}{40}$

منه : $\dfrac{a}{2}-\dfrac{b}{20}=\dfrac{109}{40}-\dfrac{17}{40}=\dfrac{109-17}{40}=\dfrac{92}{40}=\dfrac{23\times4}{10\times4}=\dfrac{23\times\cancel{4}}{10\times\cancel{4}}=\dfrac{23}{10}$

و $c=\dfrac{13}{12}-\dfrac{5}{3}-6=\dfrac{13}{12}-\dfrac{5\times\mathbf{4}}{3\times\mathbf{4}}-\dfrac{6\times\mathbf{12}}{1\times\mathbf{12}}=\dfrac{13}{12}-\dfrac{20}{12}-\dfrac{72}{12}=\dfrac{13-20-72}{12}=-\dfrac{79}{12}$

بالتالي : $A=\dfrac{\frac{a}{2}-\frac{b}{20}}{c}=\dfrac{\frac{23}{4}}{-\frac{79}{12}}=\dfrac{23}{10}\times\left(-\dfrac{12}{79}\right)=-\dfrac{23\times12}{10\times79}=-\dfrac{23\times\cancel{12}^{\,6}}{\cancel{10}^{\,5}\times79}$

$=-\dfrac{23\times6}{5\times79}=\boxed{-\dfrac{138}{395}}$

نكتب $B=\dfrac{\frac{a}{6}-\frac{b}{10}}{c}$ حيث $a=4+\dfrac{1}{3}+\dfrac{1}{5}$ ، $b=5+\dfrac{5}{9}-\dfrac{4}{3}$ و $c=-1+\dfrac{1}{2}-\dfrac{3}{4}$.

لدينا : $a=4+\dfrac{1}{3}+\dfrac{1}{5}=\dfrac{4\times\mathbf{15}}{1\times\mathbf{15}}+\dfrac{1\times\mathbf{5}}{3\times\mathbf{5}}+\dfrac{1\times\mathbf{3}}{5\times\mathbf{3}}=\dfrac{60}{15}+\dfrac{5}{15}+\dfrac{3}{15}=\dfrac{60+5+3}{15}=\dfrac{68}{15}$

منه : $\dfrac{a}{6}=\dfrac{\frac{68}{15}}{6}=\dfrac{68}{15\times6}=\dfrac{34\times2}{15\times3\times2}=\dfrac{34\times\cancel{2}}{45\times\cancel{2}}=\dfrac{34}{45}$

و $b=5+\dfrac{5}{9}-\dfrac{4}{3}=\dfrac{5\times\mathbf{9}}{1\times\mathbf{9}}+\dfrac{5}{9}-\dfrac{4\times\mathbf{3}}{3\times\mathbf{3}}=\dfrac{45}{9}+\dfrac{5}{9}-\dfrac{12}{9}=\dfrac{45+5-12}{9}=\dfrac{38}{9}$

منه : $\dfrac{b}{10}=\dfrac{\frac{38}{9}}{10}=\dfrac{38}{9\times10}=\dfrac{38}{90}=\dfrac{19}{45}$

منه : $\dfrac{a}{6}-\dfrac{b}{10}=\dfrac{34}{45}-\dfrac{19}{45}=\dfrac{34-19}{45}=\dfrac{15}{45}=\dfrac{\cancel{15}}{3\times\cancel{15}}=\dfrac{1}{3}$

و $c=-1+\dfrac{1}{2}-\dfrac{3}{4}=-\dfrac{1\times\mathbf{4}}{1\times\mathbf{4}}+\dfrac{1\times\mathbf{2}}{2\times\mathbf{2}}-\dfrac{3}{4}=-\dfrac{4}{4}+\dfrac{2}{4}-\dfrac{3}{4}=\dfrac{-4+2-3}{4}=-\dfrac{5}{4}$

بالتالي : $A=\dfrac{\frac{a}{6}-\frac{b}{10}}{c}=\dfrac{\frac{1}{3}}{-\frac{5}{4}}=\dfrac{1}{3}\times\left(-\dfrac{4}{5}\right)=-\dfrac{1\times4}{3\times5}=\boxed{-\dfrac{4}{15}}$

نكتب $C=\dfrac{a}{b}\times\dfrac{c}{d}\times\dfrac{e}{f}$ حيث $a=\dfrac{3}{5}-\dfrac{1}{2}$ ، $b=3-\dfrac{1}{4}$ ، $c=\dfrac{1}{6}+\dfrac{2}{9}$ ، $d=\dfrac{3}{8}-1$ ، $e=-8+\dfrac{5}{2}$ و $f=1-\dfrac{3}{10}$.

لدينا : $a=\dfrac{6-5}{10}=\dfrac{1}{10}$, $b=\dfrac{12-1}{4}=\dfrac{11}{4}$, $\dfrac{a}{b}=\dfrac{\frac{1}{10}}{\frac{11}{4}}=\dfrac{1}{10}\times\dfrac{4}{11}=\dfrac{4}{110}=\dfrac{2}{55}$

$c=\dfrac{3+4}{18}=\dfrac{7}{18}$, $d=\dfrac{3-8}{8}=-\dfrac{5}{8}$, $\dfrac{c}{d}=\dfrac{\frac{7}{18}}{-\frac{5}{8}}=-\dfrac{7}{18}\times\dfrac{8}{5}=-\dfrac{56}{90}=-\dfrac{28}{45}$

$e=\dfrac{-16+5}{2}=-\dfrac{11}{2}$, $f=\dfrac{10-3}{10}=\dfrac{7}{10}$, $\dfrac{e}{f}=\dfrac{-\frac{11}{2}}{\frac{7}{10}}=-\dfrac{11}{2}\times\dfrac{10}{7}=-\dfrac{110}{14}=-\dfrac{55}{7}$

و بالتالي : $C=\dfrac{a}{b}\times\dfrac{c}{d}\times\dfrac{e}{f}=\left(\dfrac{2}{55}\right)\times\left(-\dfrac{28}{45}\right)\times\left(-\dfrac{55}{7}\right)=+\dfrac{2\times\cancel{28}^{\,4}\times\cancel{55}}{\cancel{55}\times45\times\cancel{7}^{\,1}}$

$=\dfrac{2\times4}{45\times1}=\boxed{\dfrac{8}{45}}$

نكتب $D=\dfrac{a}{b}\times\dfrac{c}{d}\times\dfrac{e}{f}$ حيث $a=\dfrac{11}{12}+\dfrac{1}{8}$ ، $b=3-\dfrac{3}{7}$ ، $c=-2+\dfrac{2}{9}$ ، $d=\dfrac{5}{8}-\dfrac{3}{2}$ ، $e=2+\dfrac{3}{7}$ و $f=4-\dfrac{2}{9}$.

لدينا : $a=\dfrac{22+3}{24}=\dfrac{25}{24}$, $b=\dfrac{21-3}{7}=\dfrac{18}{7}$, $\dfrac{a}{b}=\dfrac{25}{24}\times\dfrac{7}{18}=\dfrac{175}{432}$

$c=\dfrac{-18+2}{9}=-\dfrac{16}{9}$, $d=\dfrac{5-9}{6}=-\dfrac{4}{6}=-\dfrac{2}{3}$, $\dfrac{c}{d}=+\dfrac{16}{9}\times\dfrac{3}{2}=\dfrac{8}{3}$

$e=\dfrac{14+3}{7}=\dfrac{17}{7}$, $f=\dfrac{36-2}{9}=\dfrac{34}{9}$, $\dfrac{e}{f}=\dfrac{17}{7}\times\dfrac{9}{34}=\dfrac{9}{7\times2}=\dfrac{9}{14}$

و بالتالي : $D=\dfrac{a}{b}\times\dfrac{c}{d}\times\dfrac{e}{f}=\left(\dfrac{175}{432}\right)\times\left(\dfrac{8}{3}\right)\times\left(\dfrac{9}{14}\right)=\dfrac{25\times\cancel{7}}{\cancel{8}\times\cancel{9}\times6}\times\dfrac{\cancel{8}}{3}\times\dfrac{\cancel{9}}{2\times\cancel{7}}=\boxed{\dfrac{25}{36}}$

8 ☺ أحسب ثم اختزل النتائج :

$a=\frac{2}{5}+\frac{3}{2}$ ، $b=\frac{1}{21}-\frac{5}{6}$ ، $c=\frac{1}{64}\times\frac{8}{3}$ ، $d=\frac{7}{33}:\frac{21}{11}$ ،
$e=\frac{1}{2}+\frac{7}{10}$ ، $f=\frac{1}{2}-\frac{7}{10}$ ، $g=\frac{1}{2}\times\frac{7}{10}$ ، $h=\frac{1}{2}:\frac{7}{10}$.

$$a=\frac{2}{5}+\frac{3}{2}=\frac{2\times\mathbf{2}}{5\times\mathbf{2}}+\frac{3\times\mathbf{5}}{2\times\mathbf{5}}=\frac{4}{10}+\frac{15}{10}=\frac{4+15}{10}=\boxed{\frac{19}{10}}$$

$$b=\frac{1}{21}-\frac{5}{6}=\frac{1\times\mathbf{2}}{21\times\mathbf{2}}-\frac{5\times\mathbf{7}}{6\times\mathbf{7}}=\frac{2}{42}-\frac{35}{42}=\frac{2-35}{10}=-\frac{33}{42}=-\frac{11\times\cancel{3}}{14\times\cancel{3}}=\boxed{-\frac{11}{14}}$$

$$c=\frac{1}{64}\times\frac{8}{3}=\frac{1\times 8}{64\times 3}=\frac{\cancel{8}^{1}}{\cancel{64}^{8}\times 3}=\frac{1}{8\times 3}=\boxed{\frac{1}{24}}$$

$$d=\frac{7}{33}:\frac{21}{11}=\frac{7}{33}\times\frac{11}{21}=\frac{7\times 11}{33\times 21}=\frac{\cancel{7}^{1}\times\cancel{11}^{1}}{\cancel{33}^{3}\times\cancel{21}^{3}}=\frac{1\times 1}{3\times 3}=\boxed{\frac{1}{9}}$$

$$e=\frac{1}{2}+\frac{7}{10}=\frac{1\times\mathbf{5}}{2\times\mathbf{5}}+\frac{7}{10}=\frac{5}{10}+\frac{7}{10}=\frac{5+7}{10}=\frac{12}{10}=\boxed{\frac{6}{5}}$$

$$f=\frac{1}{2}-\frac{7}{10}=\frac{1\times\mathbf{5}}{2\times\mathbf{5}}-\frac{7}{10}=\frac{5}{10}-\frac{7}{10}=\frac{5-7}{10}=-\frac{2}{10}=\boxed{-\frac{1}{5}}$$

$$g=\frac{1}{2}\times\frac{7}{10}=\frac{1\times 7}{2\times 10}=\boxed{\frac{7}{20}}$$

$$h=\frac{1}{2}:\frac{7}{10}=\frac{1}{2}\times\frac{10}{7}=\frac{1\times 10}{2\times 7}=\frac{\cancel{10}^{5}}{\cancel{2}^{1}\times 7}=\frac{5\times 1}{1\times 7}=\boxed{\frac{5}{7}}$$

9 😐 إختزل العوامل المشتركة و اكتب النتائج على أبسط شكل :

$A=\frac{2^3\times 7^2\times 10^2}{2\times 7^5\times 10^3}$ ، $B=\frac{2\times 3^2\times 7^4}{3\times 4\times 14}$.

$$A=\frac{\cancel{2}\times 2^2\times\cancel{7^2}\times\cancel{10^2}}{\cancel{2}\times\cancel{7^2}\times 7^3\times\cancel{10^2}\times 10}=\frac{2^2}{7^3\times 10}=\frac{\cancel{2}\times 2}{7^3\times\cancel{2}\times 5}=\frac{2}{7^3\times 5}=\boxed{\frac{2}{1715}}$$

$$B=\frac{2\times 3^2\times 7^4}{3\times 4\times 14}=\frac{\cancel{2}\times\cancel{3}\times 3\times\cancel{7}\times 7^3}{\cancel{3}\times 4\times\cancel{2}\times\cancel{7}}=\frac{3\times 7^3}{4}=\boxed{\frac{1029}{4}}$$

10 ☹ أحسب ثم اختزل النتائج :

$$A=\left[\left(\frac{7}{8}-\frac{9}{16}-13\right)+\left(-\frac{5}{12}+\frac{4}{27}+1\right)\right]-\left[\left(\frac{9}{4}+\frac{1}{3}-6\right)-\left(\frac{1}{8}-\frac{1}{9}\right)\right]$$

$$B=\left(-\frac{7}{9}\right)\left[\left(3+\frac{1}{4}-\frac{19}{5}\right)-\left(-\frac{2}{5}-\frac{3}{4}\right)\right]+\left(-\frac{1}{5}\right)\left[10-4\left(\frac{1}{3}+7\right)\right]$$

نكتب $A=[a+b]-[c-d]$ حيث :

$$a=\frac{7}{8}-\frac{9}{16}-13=\frac{14}{16}-\frac{9}{16}-\frac{208}{16}=\frac{14-9-208}{16}=-\frac{203}{16}$$

$$b=-\frac{5}{12}+\frac{4}{27}+1=-\frac{45}{108}+\frac{16}{108}+\frac{108}{108}=\frac{-45+16+108}{108}=\frac{79}{108}$$

$$c=\frac{9}{4}+\frac{1}{3}-6=\frac{27}{12}+\frac{4}{12}-\frac{72}{16}=\frac{27+4-72}{12}=-\frac{41}{12}$$

$$d=\frac{1}{8}-\frac{1}{9}=\frac{9}{72}-\frac{8}{72}=\frac{1}{72}$$

منه :

$$A=\left[-\frac{203}{16}+\frac{79}{108}\right]-\left[-\frac{41}{12}-\frac{1}{72}\right]=-\frac{203}{16}+\frac{79}{108}+\frac{41}{12}+\frac{1}{72}$$

$$=\frac{-203\times 27+79\times 4+41\times 36+1\times 6}{432}=\boxed{-\frac{3683}{32}}$$

$$B=\left(-\frac{7}{9}\right)\left[\left(\frac{60}{20}+\frac{5}{20}-\frac{76}{20}\right)-\left(-\frac{8}{20}-\frac{15}{20}\right)\right]+\left(-\frac{1}{5}\right)\left[10-4\left(\frac{1}{3}+\frac{21}{3}\right)\right]$$

$$=\left(-\frac{7}{9}\right)\left[\frac{60+5-76}{20}-\frac{-8-15}{20}\right]+\left(-\frac{1}{5}\right)\left[10-4\left(\frac{1+21}{3}\right)\right]$$

$$=\left(-\frac{7}{9}\right)\left[-\frac{11}{20}+\frac{23}{20}\right]+\left(-\frac{1}{5}\right)\left[10-4\times\frac{22}{3}\right]$$

$$=\left(-\frac{7}{9}\right)\left[\frac{-11+23}{20}\right]+\left(-\frac{1}{5}\right)\left[\frac{30}{3}-\frac{88}{3}\right]$$

$$=\left(-\frac{7}{9}\right)\left[\frac{12}{20}\right]+\left(-\frac{1}{5}\right)\left[\frac{30-88}{3}\right]=\left(-\frac{7}{9}\right)\left[\frac{3}{5}\right]+\left(-\frac{1}{5}\right)\left[-\frac{58}{3}\right]$$

$$=-\frac{7}{15}+\frac{58}{15}=\frac{-7+58}{15}=\frac{51}{15}=\boxed{\frac{17}{5}}$$