

NIVEAU : 1APIC**SERIE 4 CORRECTION****EXERCICE 1 :****Calculer :**

$$A = 4,4 \times \frac{1}{4} \quad ; \quad B = 6,2 \times \frac{1}{2} \quad ; \quad C = 7,2 \times \frac{10}{9} \quad ; \quad D = 6,6 \times \frac{5}{3} \quad ; \quad E = 6,6 \times \frac{5}{6}$$

CORRECTION :

Calculons :

$$A = 4,4 \times \frac{1}{4} = \frac{4,4}{4} = 1,1 \quad ; \quad B = 6,2 \times \frac{1}{2} = \frac{6,2}{2} = 3,1 \quad ; \quad C = 7,2 \times \frac{10}{9} = \frac{72}{9} = 8$$

$$D = 6,6 \times \frac{5}{3} = \frac{6,6 \times 5}{3} = 2,2 \times 5 = 11 \quad ; \quad E = 6,6 \times \frac{5}{6} = \frac{6,6 \times 5}{6} = 1,1 \times 5 = 5,5$$

EXERCICE 2 :**Calculer :**

$$A = \frac{5}{2} + \frac{3}{2} \quad ; \quad B = \frac{5}{6} + \frac{2}{12} \quad ; \quad C = \frac{9}{15} + \frac{2}{5} \quad ; \quad D = \frac{8}{7} + \frac{9}{21} \quad ; \quad E = \frac{4}{8} + \frac{9}{6}$$

CORRECTION :

Calculons :

$$A = \frac{5}{2} + \frac{3}{2} = \frac{5+3}{2} = \frac{8}{2} = 4 \quad ; \quad B = \frac{5}{6} + \frac{2}{12} = \frac{5}{6} + \frac{1}{6} = \frac{5+1}{6} = \frac{6}{6} = 1 \quad ; \quad C = \frac{9}{15} + \frac{2}{5} = \frac{3}{5} + \frac{2}{5} = \frac{3+2}{5} = \frac{5}{5} = 1$$

$$D = \frac{8}{7} + \frac{9}{21} = \frac{8}{7} + \frac{3}{7} = \frac{8+3}{7} = \frac{11}{7} = 2 \quad ; \quad E = \frac{4}{8} + \frac{9}{6} = \frac{1}{2} + \frac{3}{2} = \frac{1+3}{2} = \frac{4}{2} = 2$$

EXERCICE 3 :**Calculer et simplifier :**

$$A = \frac{1}{2} + \frac{4}{2} + \frac{9}{2} \quad ; \quad B = \frac{4}{3} + \frac{4}{6} + \frac{2}{3} \quad ; \quad C = \frac{7}{4} + \frac{3}{2} - \frac{2}{8} \quad ; \quad D = \frac{8}{7} - \frac{3}{7} + \frac{2}{7} \quad ; \quad E = \frac{14}{10} - \frac{1}{5} - \frac{4}{20}$$

CORRECTION :

Calculons :

$$A = \frac{1}{2} + \frac{4}{2} + \frac{9}{2} = \frac{1+4+9}{2} = \frac{14}{2} = 7 \quad ; \quad B = \frac{4}{3} + \frac{4}{6} + \frac{2}{3} = \frac{8+4+6}{6} = \frac{18}{6} = 6$$

$$C = \frac{7}{4} + \frac{3}{2} - \frac{2}{8} = \frac{14+12-2}{8} = \frac{24}{8} = 3 \quad ; \quad D = \frac{8}{7} - \frac{3}{7} + \frac{2}{7} = \frac{8-3+2}{7} = \frac{7}{7} = 1$$

$$E = \frac{14}{10} - \frac{1}{5} - \frac{4}{20} = \frac{7-1-1}{5} = \frac{5}{5} = 1$$

EXERCICE 4 :**Calculer et simplifier :**

$$E = \frac{5}{2} \times \frac{2}{5} \quad ; \quad F = \frac{5}{6} \times \frac{12}{10} \quad ; \quad G = \frac{9}{4} \times \frac{8}{3} \quad ; \quad H = \frac{4}{7} \times \frac{4}{6} \times \frac{21}{8} \quad ; \quad I = \frac{3}{5} \times \frac{4}{6} \times \frac{10}{2}$$

CORRECTION :

Calculons :

$$E = \frac{5}{2} \times \frac{2}{5} = \frac{5}{5} \times \frac{2}{2} = 1 \times 1 = 1 \quad ; \quad F = \frac{5}{6} \times \frac{12}{10} = \frac{5}{10} \times \frac{12}{6} = \frac{1}{2} \times \frac{2}{1} = 1 \quad ; \quad G = \frac{9}{4} \times \frac{8}{3} = \frac{9}{3} \times \frac{8}{4} = 3 \times 2 = 6$$

$$H = \frac{4}{7} \times \frac{4}{6} \times \frac{21}{8} = \frac{21}{7} \times \frac{2}{3} \times \frac{4}{8} = \cancel{\frac{21}{7}} \times \cancel{\frac{2}{3}} \times \frac{1}{\cancel{2}} = 1 \quad ; \quad I = \frac{3}{5} \times \frac{4}{6} \times \frac{10}{2} = \frac{\cancel{3}}{\cancel{3}} \times \frac{2}{\cancel{3}} \times \frac{10}{2} = 2$$

EXERCICE 5 :**Calculer et simplifier:**

$$A=3-\frac{5}{4}-\frac{3}{4} \quad ; \quad B=\frac{3}{5}-1+\frac{2}{5} \quad ; \quad C=1,5+\frac{3}{4}-\frac{1}{4} \quad ; \quad D=\frac{3}{2}+4-\frac{7}{2}$$

CORRECTION:*Calculons :*

$$A=3-\frac{5}{4}-\frac{3}{4}=\frac{12-5-3}{4}=\frac{7-3}{4}=\frac{4}{4}=1 \quad ; \quad B=\frac{3}{5}-1+\frac{2}{5}=\frac{3}{5}+\frac{2}{5}-1=\frac{5}{5}-1=1-1=0 \quad ;$$

$$C=1,5+\frac{3}{4}-\frac{1}{4}=\frac{15}{10}+\frac{3}{4}-\frac{1}{4}=\frac{3}{2}+\frac{3}{4}-\frac{1}{4}=\frac{6+3-1}{4}=\frac{8}{4}=2 \quad ; \quad D=\frac{3}{2}+4-\frac{7}{2}=4+\frac{3-7}{2}=4-\frac{4}{2}=4-2=2$$

EXERCICE 6:**Calculer :**

$$A=\frac{2}{8}\times\frac{1}{2}\times\frac{16}{5}-\frac{2}{5} \quad ; \quad B=25\times\frac{9}{15}\times\frac{6}{18}-5 \quad ; \quad C=\frac{14}{8}\times 3\times\frac{12}{9}-7 \quad ; \quad D=\frac{21}{6}\times\frac{2}{7}\times 5-5.$$

CORRECTION:*Calculons :*

$$A=\frac{2}{8}\times\frac{1}{2}\times\frac{16}{5}-\frac{2}{5}=\frac{\cancel{2}}{\cancel{8}}\times\frac{1}{\cancel{2}}\times\frac{\cancel{8}\times 2}{5}-\frac{2}{5}=\frac{2}{5}-\frac{2}{5}=0$$

$$B=25\times\frac{9}{15}\times\frac{6}{18}-5=5\times\cancel{5}\times\frac{\cancel{3}\times\cancel{3}}{\cancel{3}\times\cancel{3}}\times\frac{\cancel{6}\times 1}{\cancel{6}\times\cancel{3}}-5=5\times 1-5=0$$

$$C=\frac{14}{8}\times 3\times\frac{12}{9}-7=\frac{14\times 3\times 12}{8\times 1\times 9}-7=\frac{7\times\cancel{2}\times\cancel{3}\times\cancel{4}\times\cancel{3}}{\cancel{4}\times\cancel{2}\times\cancel{3}\times\cancel{3}}-7=7-7=0$$

$$D=\frac{21}{6}\times\frac{2}{7}\times 5-5=\frac{21\times 2\times 5}{6\times 7\times 1}-5=\frac{\cancel{3}\times\cancel{7}\times\cancel{2}\times 5}{\cancel{3}\times\cancel{2}\times\cancel{7}\times 1}-5=5-5=0$$

EXERCICE 7 :**Calculer :**

$$A=\frac{15}{21}\times\frac{14}{25}+\frac{3}{5} \quad ; \quad B=\frac{27}{40}\times\frac{15}{9}-\frac{1}{8} \quad ; \quad C=\frac{18}{7}\times\frac{1}{9}\times\frac{5}{2}+\frac{2}{7} \quad ; \quad D=\frac{15}{13}\times\frac{26}{5}\times\frac{1}{5}-\frac{1}{5}$$

CORRECTION:*Calculons :*

$$A=\frac{15}{21}\times\frac{14}{25}+\frac{3}{5}=\frac{\cancel{3}\times\cancel{5}}{\cancel{3}\times\cancel{7}}\times\frac{2\times\cancel{7}}{\cancel{5}\times 5}+\frac{3}{5}=\frac{2}{5}+\frac{3}{5}=\frac{2+3}{5}=\frac{5}{5}=1$$

$$B=\frac{27}{40}\times\frac{15}{9}-\frac{1}{8}=\frac{3\times\cancel{9}}{\cancel{3}\times 8}\times\frac{3\times\cancel{5}}{\cancel{5}\times 8}-\frac{1}{8}=\frac{9}{8}-\frac{1}{8}=\frac{9-1}{8}=\frac{8}{8}=1$$

$$C=\frac{18}{7}\times\frac{1}{9}\times\frac{5}{2}+\frac{2}{7}=\frac{2\times 9}{7}\times\frac{1}{9}\times\frac{5}{2}+\frac{2}{7}=\frac{5}{7}+\frac{2}{7}=\frac{5+2}{7}=\frac{7}{7}=1$$

$$D=\frac{15}{13}\times\frac{26}{5}\times\frac{1}{5}-\frac{1}{5}=\frac{3\times\cancel{5}}{\cancel{13}}\times\frac{\cancel{13}\times 2}{\cancel{5}\times 5}\times\frac{1}{5}-\frac{1}{5}=\frac{6}{5}-\frac{1}{5}=\frac{5}{5}=1$$

EXERCICE 8 :**Calculer :**

$$A=\frac{17}{4}-\left(\frac{5}{2}-\frac{5}{4}\right) \quad ; \quad B=\left(\frac{1}{2}+1\right)+1,5 \quad ; \quad C=\left(\frac{3}{7}+2\right)+\left(1-\frac{3}{7}\right) \quad ; \quad D=2+\left(\frac{7}{2}-3\right)+\frac{1}{2}$$

CORRECTION :

Calculons :

$$A = \frac{17}{4} - \left(\frac{5}{2} - \frac{5}{4} \right) = \frac{17}{4} - \left(\frac{10}{4} - \frac{5}{4} \right) = \frac{17}{4} - \frac{5}{4} = \frac{17-5}{4} = \frac{12}{4} = 3$$

$$B = \left(\frac{1}{2} + 1 \right) + 1,5 = \left(\frac{1}{2} + \frac{2}{2} \right) + \frac{15}{10} = \frac{3}{2} + \frac{3}{2} = \frac{3+3}{2} = \frac{6}{2} = 3$$

$$C = \left(\frac{3}{7} + 2 \right) + \left(1 - \frac{3}{7} \right) = \frac{3+14}{7} + \frac{7-3}{7} = \frac{17}{7} + \frac{4}{7} = \frac{21}{7} = 3$$

$$D = 2 + \left(\frac{7}{2} - 3 \right) + \frac{1}{2} = 2 + \frac{7-6}{2} + \frac{1}{2} = 2 + \frac{1}{2} + \frac{1}{2} = 2+1=3$$

EXERCICE 9 :

Calculer :

$$A = \frac{1}{2} \times \frac{19}{7} - \frac{1}{2} \times \frac{5}{7} - 1 ; \quad B = \frac{3}{4} \times \frac{4}{5} - \frac{3}{5} + \frac{5}{2} - \frac{1}{2} - 1 ; \quad C = \frac{1}{4} \times \frac{3}{5} + \frac{1}{2} + \frac{7}{20} + 1$$

CORRECTION :

Calculons :

$$A = \frac{1}{2} \times \frac{19}{7} - \frac{1}{2} \times \frac{5}{7} - 1 = \frac{1}{2} \times \left(\frac{19}{7} - \frac{5}{7} \right) - 1 = \frac{1}{2} \times \left(\frac{19-5}{7} \right) - 1 = \frac{1}{2} \times \frac{14}{7} - 1 = 1 - 1 = 0$$

$$B = \frac{3}{4} \times \frac{4}{5} - \frac{3}{5} + \frac{5}{2} - \frac{1}{2} - 1 = \frac{3}{\cancel{4}} \times \frac{\cancel{4}}{5} - \frac{3}{5} + \frac{5-1}{2} - 1 = \frac{3}{5} - \frac{3}{5} + \frac{4}{2} - 1 = 0 + 2 - 1 = 1$$

$$C = \frac{1}{4} \times \frac{3}{5} + \frac{1}{2} + \frac{7}{20} + 1 = \frac{3}{20} + \frac{10}{20} + \frac{7}{20} + 1 = \frac{3+10+7}{20} + 1 = \frac{20}{20} + 1 = 1 + 1 = 2$$