FRACCIONES

Problema 18:

Resolver

$$\{\frac{20,1}{20}+[\,1+\left(\frac{2}{3}+\left(\frac{\frac{7}{12}}{\frac{0,3}{1,6}}+\frac{2}{\frac{3}{7}}-\frac{\frac{1}{4}}{3}\right)X0,9+\frac{5}{8}\right)X\frac{5}{12}-\frac{2}{5}\Bigg]X\frac{\frac{27}{20}}{\frac{1}{8}}\Bigg\}x\frac{2}{13}-\frac{21}{25}$$

Solución Problema 18:

Convertimos las fracciones decimales en fracciones ordinarias:

$$20,1=\frac{\mathbf{201}}{\mathbf{10}}$$

$$0,3=\frac{\mathbf{3}}{\mathbf{10}}$$

$$0,9=\frac{\mathbf{9}}{\mathbf{10}}$$

$$1{,}6 = \frac{16}{10} = \frac{2x8}{2x5} = \mathbf{\frac{8}{5}}$$

A continuación sustituimos su valor en la fracción original y operamos sobre ella:

$$\left\{\frac{20{,}1}{20} + \left[1 + \left(\frac{2}{3} + \left(\frac{\frac{7}{12}}{\frac{0{,}3}{1{,}6}} + \frac{2}{3} - \frac{\frac{1}{4}}{3}\right)X0{,}9 + \frac{5}{8}\right)X\frac{5}{12} - \frac{2}{5}\right]X\frac{\frac{27}{20}}{\frac{1}{8}}\right\} x \frac{2}{13} - \frac{21}{25}$$

$$\left\{\frac{\mathbf{\frac{201}{10}}}{20} + \left[1 + \left(\frac{2}{3} + \left(\frac{\frac{7}{12}}{\mathbf{\frac{3}{\frac{10}{8}}}} + \frac{2}{3} - \frac{\frac{1}{4}}{3}\right)X\mathbf{\frac{9}{10}} + \frac{5}{8}\right)X\frac{5}{12} - \frac{2}{5}\right]X\frac{\frac{27}{20}}{\frac{1}{8}}\right\} x \frac{2}{13} - \frac{21}{25}$$

$$\left\{\frac{\frac{\mathbf{201}}{\mathbf{10}}}{20}+\left[1+\left(\frac{2}{3}+\left(\frac{\frac{7}{12}}{\frac{\mathbf{3}}{\frac{\mathbf{10}}{\mathbf{8}}}}+\frac{2}{\frac{3}{7}}-\frac{\frac{1}{4}}{3}\right)\mathrm{X}\frac{\mathbf{9}}{\mathbf{10}}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{X}\frac{\frac{27}{20}}{\frac{1}{8}}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[1+\left(\frac{2}{3}+\left(\frac{\frac{7}{12}}{\frac{3x5}{8x10}}+\frac{2x7}{3}-\frac{1}{3\mathrm{x}4}\right)\mathrm{X}\frac{9}{10}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{X}\frac{27\mathrm{x}8}{1\mathrm{x}20}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[1+\left(\frac{2}{3}+\left(\frac{7x8x10}{3x5x12}+\frac{2x7}{3}-\frac{1}{3\mathrm{x}4}\right)\mathrm{X}\frac{9}{10}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{X}\frac{27\mathrm{x}8}{1\mathrm{x}20}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[1+\left(\frac{2}{3}+\left(\frac{7x\cancel{4}x2x\cancel{5}x2}{3x\cancel{5}x\cancel{4}x3}+\frac{2x7}{3}-\frac{1}{3\mathrm{x}4}\right)\mathrm{X}\frac{9}{10}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{X}\frac{27\mathrm{x}\cancel{4}\mathrm{x}2}{1\mathrm{x}\cancel{4}\mathrm{x}5}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[1+\left(\frac{2}{3}+\left(\frac{7x2x2}{3x3}+\frac{2x7}{3}-\frac{1}{3\mathrm{x}4}\right)\mathrm{X}\frac{9}{10}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{X}\frac{27\mathrm{x}2}{5}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

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$$\left\{\frac{201}{200}+\left[\,1+\left(\frac{2}{3}+\left(\frac{7x2x2}{3x3}+\frac{2x7}{3}-\frac{1}{3x4}\right)\mathrm{X}\frac{9}{10}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{X}\frac{27\mathrm{x}2}{5}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[\,1+\left(\frac{2}{3}+\frac{7x2x2x4+2x7x3x4-3}{3x3x4}\mathrm{X}\frac{9}{10}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[\,1+\left(\frac{2}{3}+\frac{112+168-3}{3x3x4}\mathrm{X}\frac{9}{10}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[\,1+\left(\frac{2}{3}+\frac{277}{3x3x4}\mathrm{X}\frac{9}{10}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[\,1+\left(\frac{2}{3}+\frac{277\cancel{x9}}{\cancel{3x3}x4x10}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[\,1+\left(\frac{2}{3}+\frac{277}{4x10}+\frac{5}{8}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[\,1+\left(\frac{2x40+277x3+5x15}{120}\right)\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{x}\frac{2}{13}-\frac{21}{25}$$

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$$\left\{\frac{201}{200}+\left[1+\frac{986}{120}\mathrm{X}\frac{5}{12}-\frac{2}{5}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{X}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[1+\frac{986x\cancel{5}}{\cancel{5}\mathrm{x}24\mathrm{x}12}-\frac{2}{5}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{X}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[1+\frac{\cancel{2}x493}{24\mathrm{x}\cancel{2}\mathrm{x}6}-\frac{2}{5}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{X}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[1+\frac{493}{144}-\frac{2}{5}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{X}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[\frac{1x144x5+493x5-2x144}{720}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{X}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[\frac{720+2465-288}{720}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{X}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\left[\frac{2897}{720}\right]\mathrm{x}\frac{27\mathrm{x}2}{5}\right\}\mathrm{X}\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\frac{2897x\cancel{9}x3x\cancel{2}}{\cancel{2}x40x\cancel{9}x5}\right\}x\frac{2}{13}-\frac{21}{25}$$

$$\left\{\frac{201}{200}+\frac{2897x3}{40x5}\right\}x\frac{2}{13}-\frac{21}{25}$$

$$\frac{201+2897x3}{200}x\frac{2}{13}-\frac{21}{25}$$

$$\frac{8892}{200}x\frac{2}{13}-\frac{21}{25}$$

$$\frac{684x\cancel{13x2}}{\cancel{2}x100x\cancel{13}}-\frac{21}{25}$$

$$\frac{684}{100}-\frac{21}{25}=\frac{684-4x21}{100}=\frac{684-84}{100}=\frac{600}{100}=\mathbf{6}$$

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