

Exercices supplémentaires, à réaliser sans la calculatrice.

◆ **Exercice 1** : (Opérations sur les fractions,)

Donner les résultats des calculs suivants sous la forme d'une fraction simplifiée le plus possible ou d'un nombre relatif.

$$A = \frac{50}{4} \times \frac{2}{25}$$

$$B = \frac{3}{5} \times 25$$

$$C = \frac{13}{7} + \frac{-2}{3}$$

$$D = \frac{11}{10} + 3$$

$$E = \frac{3}{8} + \frac{5}{8}$$

$$F = \frac{7}{\frac{5}{3}}$$

$$G = \frac{35}{8} \div \frac{30}{4}$$

$$H = \frac{-3}{2} \times \frac{-5}{-6} \times \frac{1}{2}$$

$$I = \frac{25}{8} \times \frac{-4}{30}$$

$$J = \frac{3}{7} + \frac{1}{2} + \frac{4}{5}$$

$$K = \frac{500}{4} \times \frac{-2}{-800}$$

$$L = \frac{3}{5} + 25$$

$$M = \frac{1}{-7} - \frac{33}{8} \times \frac{64}{55}$$

$$N = \frac{4}{-3} \times \frac{12}{-5} - \frac{6}{5} \times \frac{4}{3}$$

$$O = \frac{13}{7} + \frac{49}{\frac{27}{33}}$$

$$P = \frac{7}{\frac{5}{4}} - \frac{55}{5}$$

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Les calculs sont ici très détaillés pour la correction, mais il est préférable de ne pas autant détailler et de faire mentalement les calculs qui semblent évidents.

$$A = \frac{50}{4} \times \frac{2}{25} = \frac{\cancel{2} \times \cancel{25} \times \cancel{2}}{\cancel{2} \times \cancel{2} \times 25} = \frac{1}{1} = \boxed{1}$$

$$B = \frac{3}{5} \times 25 = \frac{3}{5} \times \frac{25}{1} = \frac{3 \times 25}{5 \times 1} = \frac{3 \times \cancel{5} \times 5}{\cancel{5}} = \boxed{15}$$

$$C = \frac{13}{7} + \frac{-2}{3} = \frac{13 \times 3}{7 \times 3} + \frac{-2 \times 7}{3 \times 7} = \frac{39}{21} + \frac{-14}{21} = \frac{39-14}{21} = \boxed{\frac{25}{21}}$$

$$D = \frac{11}{10} + 3 = \frac{11}{10} + \frac{3}{1} = \frac{11}{10} + \frac{30}{10} = \frac{11+30}{10} = \boxed{\frac{41}{10}}$$

$$E = \frac{3}{8} + \frac{5}{8} = \frac{3+5}{8} = \frac{8}{8} = \boxed{1}$$

$$F = \frac{7}{\frac{3}{2}} = \frac{7}{5} \div \frac{3}{2} = \frac{7}{5} \times \frac{2}{3} = \frac{7 \times 2}{5 \times 3} = \boxed{\frac{14}{15}}$$

$$G = \frac{35}{8} \div \frac{30}{4} = \frac{35}{8} \times \frac{4}{30} = \frac{35 \times 4}{8 \times 30} = \frac{\cancel{4} \times 7 \times \cancel{4}}{2 \times \cancel{4} \times 5 \times 6} = \boxed{\frac{7}{12}}$$

$$H = \frac{-3}{2} \times \frac{-5}{-6} \times \frac{1}{2} = \frac{-3 \times (-5) \times 1}{2 \times -6 \times 2} = \frac{\cancel{3} \times (-5) \times 1}{2 \times \cancel{3} \times 2 \times 2} = \boxed{\frac{-5}{8}}$$

$$I = \frac{25}{8} \times \frac{-4}{30} = -\frac{\cancel{5} \times 5 \times \cancel{4}}{\cancel{4} \times 2 \times 5 \times 6} = \boxed{\frac{-5}{12}}$$

$$J = \frac{3}{7} + \frac{1}{2} + \frac{4}{5} = \frac{3 \times 2 \times 5}{7 \times 2 \times 5} + \frac{1 \times 7 \times 5}{2 \times 7 \times 5} + \frac{4 \times 2 \times 7}{5 \times 2 \times 7} = \frac{30}{70} + \frac{35}{70} + \frac{56}{70} = \frac{30+35+56}{70} = \boxed{\frac{121}{70}}$$

$$K = \frac{500}{4} \times \frac{2}{-800} = -\frac{5 \times \cancel{100} \times \cancel{2}}{\cancel{2} \times 2 \times 8 \times \cancel{100}} = \boxed{\frac{-5}{16}}$$

$$L = \frac{3}{5} + 25 = \frac{3}{5} + \frac{125}{5} = \frac{3+125}{5} = \boxed{\frac{128}{5}}$$

$$M = \frac{1}{-7} - \frac{33}{8} \times \frac{64}{55} = -\frac{1}{7} - \frac{33 \times 64}{8 \times 55} = -\frac{1}{7} - \frac{\cancel{11} \times 3 \times \cancel{8} \times 8}{\cancel{8} \times \cancel{11} \times 5} = -\frac{1}{7} - \frac{24}{5} = -\frac{5}{35} - \frac{168}{35} = \boxed{-\frac{173}{35}}$$

$$N = \frac{4}{-3} \times \frac{12}{-5} - \frac{6}{5} \times \frac{4}{3} = \frac{4 \times 12}{3 \times 5} - \frac{6 \times 4}{5 \times 3} = \frac{4 \times 4 \times \cancel{3}}{\cancel{3} \times 5} - \frac{\cancel{3} \times 2 \times 4}{5 \times \cancel{3}} = \frac{16}{5} - \frac{8}{5} = \boxed{\frac{8}{5}}$$

$$O = \frac{13}{7} + \frac{\frac{49}{21}}{\frac{33}{33}} = \frac{13}{7} + \frac{49}{22} \times \frac{33}{21} = \frac{13}{7} + \frac{7 \times \cancel{7} \times \cancel{11} \times \cancel{3}}{\cancel{11} \times 2 \times 7 \times \cancel{3}} = \frac{13}{7} + \frac{7}{2} = \frac{26}{14} + \frac{49}{14} = \boxed{\frac{75}{14}}$$

$$P = \frac{7}{\frac{4}{7}} - \frac{55}{6} = \frac{7}{5} - \frac{55}{6} = \frac{7}{5} \times \frac{7}{4} - \frac{55}{6} \times \frac{1}{5} = \frac{7 \times 7}{5 \times 4} - \frac{\cancel{5} \times 11}{\cancel{5} \times 2 \times 3} = \frac{49}{20} - \frac{11}{6} = \frac{294}{120} - \frac{220}{120} = \frac{74}{120} = \boxed{\frac{37}{60}}$$