

Révisions sur les fractions: correction

Exercice 1

$$\frac{35}{49} = \frac{5 \times 7}{7 \times 7} = \frac{5}{7}$$

$$\frac{250}{150} = \frac{5 \times 50}{3 \times 50} = \frac{5}{3}$$

$$\frac{7,2}{6,3} = \frac{8 \times 9 \times 0,1}{7 \times 9 \times 0,1} = \frac{8}{7}$$

$$\frac{420}{330} = \frac{2 \times 3 \times 7 \times 10}{3 \times 11 \times 10} = \frac{14}{11}$$

$$\frac{26}{14} = \frac{2 \times 13}{2 \times 7} = \frac{13}{7}$$

$$\frac{1,17}{4,5} = \frac{9 \times 13 \times 0,01}{9 \times 5 \times 0,1} = \frac{13}{50}$$

$$\frac{261}{1305} = \frac{29 \times 9}{145 \times 9} = \frac{29}{145}$$

$$\frac{15}{39} = \frac{3 \times 5}{3 \times 13} = \frac{5}{13}$$

$$\frac{5}{0,2} = 25$$

Exercice 2

$$\text{a. } \frac{4}{3} + \frac{1}{12} = \frac{16}{12} + \frac{1}{12} = \frac{17}{12}$$

$$\text{b. } \frac{8}{4} + \frac{2}{6} = \frac{24}{12} + \frac{4}{12} = \frac{28}{12} = \frac{7}{3}$$

$$\text{c. } \frac{7}{10} + \frac{1}{15} = \frac{21}{30} + \frac{2}{30} = \frac{23}{30}$$

$$\text{d. } \frac{-5}{7} + \frac{7}{3} = \frac{-15}{21} + \frac{49}{21} = \frac{34}{21}$$

$$\text{e. } \frac{-1}{6} + \frac{1}{14} = \frac{-7}{42} + \frac{3}{42} = \frac{-4}{42} = -\frac{2}{21}$$

$$\text{f. } \frac{-5}{9} + \frac{-12}{21} = -\frac{35}{63} - \frac{36}{63} = -\frac{71}{63}$$

Exercice 3

$$A = \frac{3}{5} \times \frac{10}{6} = \frac{30}{30} = 1$$

$$B = \frac{12}{7} \times \frac{14}{9} = \frac{4 \times 3 \times 2 \times 7}{7 \times 3 \times 3} = \frac{8}{3}$$

$$C = \frac{9}{4} \times \frac{4}{9} = 1$$

$$D = \frac{8}{3} \times \frac{102}{1050} = \frac{8 \times 3 \times 2 \times 17}{3 \times 2 \times 525} = \frac{8 \times 17}{525} = \frac{136}{525}$$

$$E = \frac{7}{9} \times \frac{27}{35} \times \frac{25}{6} = \frac{7 \times 3 \times 9 \times 5 \times 5}{9 \times 7 \times 5 \times 2 \times 3} = \frac{5}{2}$$

$$F = \frac{3}{4} \times \frac{88}{15} \times 5 = \frac{3 \times 4 \times 2 \times 11 \times 5}{4 \times 3 \times 5} = \frac{2 \times 11}{1} = 22$$

Exercice 4:

$$A = \frac{4}{17} \times \frac{1}{3} = \frac{4}{51}$$

$$B = \frac{2}{9} \times \frac{0}{1} = 0$$

$$C = \frac{3}{5} \times \frac{1}{1} = \frac{3}{5}$$

$$D = \frac{9}{7} \times \frac{7}{9} = 1$$

Exercice 5

$$\text{a. } \frac{6}{7} + x = \frac{9}{14} \text{ revient à } \frac{12}{14} + x = \frac{9}{14} \text{ donc il faut enlever } \frac{5}{14} \text{ à } \frac{12}{14}. \text{ On a donc } x = -\frac{5}{14}.$$

Cela revient à écrire:

$$\frac{6}{7} + x - \frac{6}{7} = \frac{9}{14} - \frac{6}{7}$$

$$x = \frac{9}{14} - \frac{12}{14}$$

$$x = -\frac{5}{14}$$

$$\text{b. } x = \frac{7}{24} - \frac{-7}{8} = \frac{7}{24} + \frac{21}{24} = \frac{28}{24} = \frac{4 \times 7}{4 \times 6} = \frac{7}{6}$$

$$\text{d. } x = -2 - \frac{1}{7} = -\frac{14}{7} - \frac{1}{7} = -\frac{15}{7}$$

$$\text{f. } x = \frac{2}{7} - \frac{3}{5} = \frac{10}{35} - \frac{21}{35} = -\frac{11}{35}$$

$$\text{h. } x = -\frac{2}{3} - \frac{-3}{2} = -\frac{4}{6} + \frac{9}{6} = \frac{5}{6}$$

$$\text{c. } x = 2 - \frac{11}{3} = \frac{6}{3} - \frac{11}{3} = -\frac{5}{3}$$

$$\text{e. } x = \frac{3}{4} - \frac{2}{3} = \frac{9}{12} - \frac{8}{12} = \frac{1}{12}$$

$$\text{g. } x = -\frac{1}{4} - \frac{1}{5} = -\frac{5}{20} - \frac{4}{20} = -\frac{9}{20}$$

Exercice 6

$$A = \frac{2}{8} - \frac{15}{20} = \frac{1}{4} - \frac{3}{4} = -\frac{2}{4} = -\frac{1}{2}$$

$$B = \frac{9}{15} + \frac{49}{35} = \frac{3}{5} + \frac{7}{5} = \frac{10}{5} = 2$$

$$C = \frac{25}{8} - \frac{27}{24} + \frac{-17}{17} = \frac{25}{8} - \frac{9}{8} - 1 = \frac{16}{8} - 1 = 2 - 1 = 1$$

$$D = \frac{26}{-48} - \frac{11}{24} = -\frac{13}{24} - \frac{11}{24} = -\frac{24}{24} = -1$$

$$E = \frac{25}{30} - \frac{-14}{12} = \frac{5}{6} + \frac{7}{6} = \frac{12}{6} = 2$$

$$F = \frac{18}{-18} - \frac{15}{30} + \frac{-9}{6} = -1 - \frac{1}{2} - \frac{3}{2} = -\frac{6}{2} = -3$$

$$G = \frac{5}{7} + \frac{7}{5} + \frac{3}{2} = \frac{50}{70} + \frac{98}{70} + \frac{35}{70} = \frac{183}{70}$$

$$H = \left(-\frac{7}{5} + \frac{5}{9} \right) + \left[-\frac{3}{9} + \left(-\frac{14}{5} \right) \right] = -\frac{7}{5} + \frac{5}{9} - \frac{3}{9} - \frac{14}{5} = -\frac{21}{5} + \frac{2}{9} = -\frac{189}{45} + \frac{10}{45} = -\frac{179}{45}$$

Exercice 7

$$a + b - c = \frac{1}{2} + \left(-\frac{2}{3} \right) - \frac{5}{4} = \frac{6}{12} - \frac{8}{12} - \frac{15}{12} = -\frac{17}{12}$$

$$c - a - b = \frac{5}{4} - \frac{1}{2} - \left(-\frac{2}{3} \right) = \frac{15}{12} - \frac{6}{12} + \frac{8}{12} = \frac{17}{12}$$

Les deux nombres sont opposés. En effet $-(c - a - b) = -c + a + b = a + b - c$.

Exercice 8

$$A = \frac{-7}{4} + \frac{1}{4} \times \frac{-8}{3} = \frac{-21}{12} - \frac{8}{12} = \frac{-29}{12}$$

$$B = \left(\frac{-7}{4} + \frac{1}{4} \right) \times \frac{-8}{3} = \left(\frac{-6}{4} \right) \times \left(\frac{-8}{3} \right) = 4$$

$$C = \left(\frac{-7}{4} - \frac{1}{4} \right) \times \frac{-8}{3} = \frac{-8}{4} \times \frac{-8}{3} = 2 \times \frac{8}{3} = \frac{16}{3}$$

$$D = \frac{-7}{4} - \frac{1}{4} \times \frac{-8}{3} = \frac{-7}{4} + \frac{2}{3} = \frac{-21}{12} + \frac{8}{12} = -\frac{13}{12}$$

$$E = \frac{5}{14} - \frac{2}{7} \times \frac{21}{20}$$

$$E = \frac{50}{140} - \frac{42}{140}$$

$$E = \frac{8}{140}$$

$$E = \frac{2}{35}$$

$$F = \left(\frac{5}{14} + \frac{-2}{7} \right) \times \frac{21}{20}$$

$$F = \left(\frac{5}{14} - \frac{4}{14} \right) \times \frac{21}{20}$$

$$F = \frac{1}{14} \times \frac{21}{20}$$

$$F = \frac{3 \times 7}{2 \times 7 \times 20}$$

$$F = \frac{3}{40}$$

$$I = \frac{-9}{7 \times 3}$$

$$I = \frac{-9}{7 \times 3}$$

$$I = \frac{-9}{7} \times \frac{1}{3}$$

$$I = \frac{-3}{7}$$

$$G = \left(\frac{5}{14} - \frac{-2}{7} \right) \times \frac{21}{20}$$

$$G = \left(\frac{5}{14} + \frac{4}{14} \right) \times \frac{21}{20}$$

$$G = \frac{9}{14} \times \frac{21}{20}$$

$$G = \frac{27}{40}$$

$$J = \frac{-9}{7 \times 3}$$

$$J = -9 \times \frac{3}{7}$$

$$J = -\frac{9 \times 3}{7}$$

$$J = -\frac{27}{7}$$

$$H = \frac{5}{14} - \frac{-2}{7} \times \frac{21}{20}$$

$$H = \frac{5}{14} + \frac{21}{70}$$

$$H = \frac{25}{70} + \frac{21}{70}$$

$$H = \frac{46}{70}$$

$$H = \frac{23}{35}$$

$$K = \frac{-\frac{28}{27}}{-\frac{9}{12}} = \frac{28}{27} \times \frac{9}{12} = \frac{4 \times 7 \times 9}{9 \times 3 \times 4 \times 3} = \frac{7}{9}$$

$$L = \frac{\frac{14}{49}}{\frac{18}{63}} = \frac{\frac{2}{7}}{\frac{2}{9}} = \frac{2}{7} \times \frac{9}{2} = 1$$

$$M = \frac{1 + \frac{2}{3}}{1 - \frac{3}{3}} = \frac{\frac{5}{3}}{\frac{0}{3}} = \frac{5}{3} \times \frac{3}{1} = 5$$

Pensez à déterminer le signe en premier.

$$N = \frac{5 - \frac{1}{2}}{5 + \frac{3}{4}} = \frac{\frac{9}{2}}{\frac{23}{4}} = \frac{9}{2} \times \frac{4}{23} = \frac{18}{23}$$

$$O = \frac{\frac{1}{3} - \frac{1}{4}}{\frac{1}{4} - \frac{1}{3}}$$

$$O = \frac{\frac{1}{3} - \frac{1}{4}}{-\left(\frac{1}{3} - \frac{1}{4}\right)}$$

$$O = -1$$

$$P = \frac{\frac{1}{5} + \frac{3}{4}}{\frac{1}{5} + 1}$$

$$P = \frac{\frac{4}{20} + \frac{15}{20}}{\frac{1}{5} + \frac{5}{5}}$$

$$P = \frac{\frac{19}{20}}{\frac{6}{5}}$$

$$P = \frac{19}{20} \times \frac{5}{6}$$

$$P = \frac{19}{24}$$

Problème 1

1. Comme Pierre mange $\frac{1}{4}$ le matin et $\frac{2}{5}$ le midi, le reste de la tablette est donné par $1 - \frac{1}{4} - \frac{2}{5} = \frac{20 - 5 - 8}{20} = \frac{7}{20}$.

2. La tablette pèse 240 g donc le matin il mange $\frac{1}{4} \times 240 = 60$ g, le midi il mange $\frac{2}{5} \times 240 = 96$ g et le soir il mange $\frac{7}{20} \times 240 = 84$ g.

Problème 2

1. La fraction de la propriété vendue en 2004 est donnée par $\frac{4}{5} \times \left(1 - \frac{1}{4}\right) = \frac{4}{5} \times \frac{3}{4} = \frac{3}{5}$.

2. Il reste donc après les 2 ventes: $1 - \frac{1}{4} - \frac{3}{5} = \frac{20}{20} - \frac{5}{20} - \frac{12}{20} = \frac{3}{20}$ de la propriété invendu.

3. On sait que les $\frac{3}{20}$ de la propriété représente 6 hectares.

On détermine donc le nombre x tel que $\frac{3}{20} x = 6$ d'où $x = 6 \times \frac{20}{3} = 2 \times 20 = 40$ ha.