

Solutions de *Je prépare le contrôle* (p. 107)

97

$$A = \frac{2}{5} \times \frac{5}{3} = \frac{2 \times 5}{5 \times 3} = \frac{2}{3}$$

$$B = 7 \times \frac{2}{21} = \frac{7 \times 2}{7 \times 3} = \frac{2}{3}$$

$$C = \frac{3}{7} \times \frac{14}{18} = \frac{3 \times 7 \times 2}{7 \times 2 \times 3 \times 3} = \frac{1}{3}$$

$$\begin{aligned} D &= \left(\frac{5}{2} - \frac{1}{4} \right) \times \frac{5}{6} - \left(3 - \frac{7}{6} \right) \\ &= \left(\frac{5 \times 2}{2 \times 2} - \frac{1}{4} \right) \times \frac{5}{6} - \left(\frac{3 \times 6}{1 \times 6} - \frac{7}{6} \right) \\ &= \left(\frac{10}{4} - \frac{1}{4} \right) \times \frac{5}{6} - \left(\frac{18}{6} - \frac{7}{6} \right) \\ &= \frac{9}{4} \times \frac{5}{6} - \frac{11}{6} \\ &= \frac{9 \times 5}{4 \times 6} - \frac{11 \times 4}{6 \times 4} \\ &= \frac{45}{24} - \frac{44}{24} = \frac{1}{24} \end{aligned}$$

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$$\begin{aligned} E &= (-5) \times 7 \times (-2) \times (-1) \times (-20) \times (-3) \\ &= -35 \times 2 \times 60 \\ &= -70 \times 60 \\ &= -4\,200 \end{aligned}$$

$$\begin{aligned} F &= (-0,07) \times 10 \times (-300) \\ &= -0,7 \times (-300) \\ &= 210 \end{aligned}$$

$$G = 2 \times (-15) \times 0 \times (-1) \times (-3) = 0$$

99

$$\text{a. } 8 \times \frac{1}{8} = \frac{8 \times 1}{8} = 1$$

$$\text{b. } -5 \times \frac{-1}{7} = \frac{-5 \times (-1)}{7} = \frac{5}{7}$$

$$\text{c. } \frac{3}{-5} \times (-5) = \frac{3 \times (-5)}{-5} = 3$$

$$\text{d. } -\frac{1}{5} \times (-8) = \frac{-1 \times (-8)}{5} = \frac{8}{5}$$

$$\text{e. L'inverse de 7 est } \frac{1}{7}.$$

$$\text{f. L'opposé de } \frac{5}{3} \text{ est } -\frac{5}{3}.$$

$$\text{g. L'inverse de } -\frac{1}{2} \text{ est } -2.$$

$$\text{h. L'opposé de } -5 \text{ est } 5.$$

100

$$H = \frac{3}{7} \times (-2) = \frac{3 \times (-2)}{7} = -\frac{6}{7}$$

$$I = \frac{-3}{7} \times \frac{5}{-9} = \frac{3 \times 5}{7 \times 3 \times 3} = \frac{5}{21}$$

$$J = \frac{-15}{28} \times \frac{6}{-45} = \frac{15 \times 2 \times 3}{2 \times 14 \times 3 \times 15} = \frac{1}{14}$$

$$K = 2 \div \frac{-5}{3} = 2 \times \frac{3}{-5} = -\frac{2 \times 3}{5} = -\frac{6}{5}$$

$$L = \frac{\frac{2}{5}}{-3} = \frac{2}{5} \div (-3) = \frac{2}{5} \times \frac{1}{-3} = -\frac{2 \times 1}{5 \times 3} = -\frac{2}{15}$$

$$M = \frac{\frac{5}{7}}{\frac{6}{3}} = \frac{5}{3} \div \frac{7}{6} = \frac{5}{3} \times \frac{6}{7} = \frac{5 \times 3 \times 2}{3 \times 7} = \frac{10}{7}$$

$$\begin{aligned} N &= \frac{\frac{60}{-4}}{\frac{60}{21}} = \frac{60}{7} \div \frac{-4}{21} = \frac{60}{7} \times \frac{21}{-4} \\ &= -\frac{4 \times 15 \times 3 \times 7}{7 \times 4} = -45 \end{aligned}$$

$$\begin{aligned} O &= \frac{\frac{1}{4} - 5}{\frac{3}{5} - 5} = \frac{\frac{1}{4} - \frac{5 \times 3}{1 \times 3}}{\frac{3}{5} - \frac{5 \times 5}{1 \times 5}} = \frac{\frac{1}{4} - \frac{15}{3}}{\frac{3}{5} - \frac{25}{5}} = \frac{-\frac{14}{3}}{-\frac{21}{5}} \\ &= \frac{-14}{3} \div \frac{-21}{5} = \frac{-14}{3} \times \frac{5}{-21} \\ &= \frac{2 \times 7 \times 5}{3 \times 3 \times 7} = \frac{10}{9} \end{aligned}$$

$$\begin{aligned}
 P &= \left(\frac{2}{5} - \frac{5}{3}\right) \times \frac{2}{3} - \left(4 - \frac{5}{6}\right) \\
 &= \left(\frac{2 \times 3}{5 \times 3} - \frac{5 \times 5}{3 \times 5}\right) \times \frac{2}{3} - \left(\frac{4 \times 6}{1 \times 6} - \frac{5}{6}\right) \\
 &= \left(\frac{6}{15} - \frac{25}{15}\right) \times \frac{2}{3} - \left(\frac{24}{6} - \frac{5}{6}\right) \\
 &= -\frac{19}{15} \times \frac{2}{3} - \frac{19}{6} = -\frac{19 \times 2}{15 \times 3} - \frac{19}{6} \\
 &= -\frac{38}{45} - \frac{19}{6} = -\frac{38 \times 2}{45 \times 2} - \frac{19 \times 15}{6 \times 15} \\
 &= -\frac{76}{90} - \frac{285}{90} = -\frac{361}{90}
 \end{aligned}$$

101**a.** Distance parcourue le premier jour :

$$\frac{2}{5} \times 80 = \frac{2 \times 5 \times 16}{5} = 32 \text{ km}$$

b. Proportion qui lui reste à parcourir à la fin du premier jour :

$$1 - \frac{2}{5} = \frac{5}{5} - \frac{2}{5} = \frac{3}{5}$$

c. Proportion parcourue à la fin du deuxième jour :

$$\frac{1}{2} \times \frac{3}{5} = \frac{1 \times 3}{2 \times 5} = \frac{3}{10}$$

d. Distance parcourue le deuxième jour :

$$\frac{3}{10} \times 80 = \frac{3 \times 8 \times 10}{10} = 24 \text{ km}$$

Distance qui lui reste à parcourir :

$$80 - (32 + 24) = 80 - 56 = 24 \text{ km}$$