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Aufgaben zur Verbindung der Grundrechenarten

1.0 Berechnen Sie die folgenden Terme.

1.1 $2\frac{1}{4}+\frac{3}{4}\cdot\frac{1}{5}-\frac{1}{4}+\frac{11}{20}$

1.2 $4\frac{2}{3}+6\frac{1}{2}\cdot1\frac{3}{8}-\frac{5}{24}$

1.3 $5\frac{5}{6}:\left(4\frac{4}{9}:2\frac{2}{3}\right)$

1.4 $5\frac{1}{3}:\left(6\frac{3}{4}\cdot1\frac{7}{9}\right)$

1.5 $\left(\frac{9}{14}+2\frac{10}{21}\right)-2\frac{1}{7}:1\frac{1}{5}$

1.6 $\left(\frac{19}{30}:\frac{19}{6}\right):\frac{1}{5}-\frac{3}{10}$

1.7 $\left[\left(3\frac{3}{7}\cdot3\frac{1}{8}-2\frac{1}{6}\cdot3\frac{6}{13}\right):3+5\frac{4}{7}\right]:\left(1\frac{3}{4}+\frac{5}{7}\right)$

1.8 $5\frac{1}{5}-1\frac{4}{5}\cdot\left(1\frac{1}{2}+2\frac{1}{3}\cdot\frac{2}{7}\right)+\left(6\frac{2}{21}-3\frac{2}{3}\right):\left(3\frac{1}{2}\cdot\frac{3}{14}\right)$

1.9 $\left(3\frac{3}{4}\cdot9\frac{7}{20}-28\frac{1}{3}:5\frac{5}{7}\right):\left[39\frac{11}{12}-4\frac{1}{12}\cdot\left(8-3\frac{3}{7}\right)\right]$

Lösungen

1.1 $\ldots = 2\frac{5}{20} + \frac{3}{20} - \frac{5}{20} + \frac{11}{20} = 2\frac{14}{20} = 2\frac{7}{10}$

1.2 $\ldots = 4\frac{2}{3} + \frac{13}{2} \cdot \frac{11}{8} - \frac{5}{24} = 4\frac{2}{3} + \frac{143}{16} - \frac{5}{24} = 4\frac{32}{48} + 8\frac{45}{48} - \frac{10}{48} = 13\frac{19}{48}$

1.3 $\frac{35}{6} : \left(\frac{40}{9} \cdot \frac{3}{8}\right) = \frac{35}{6} : \frac{5}{3} = \frac{35}{6} \cdot \frac{3}{5} = \frac{7}{2} = 3\frac{1}{2}$

1.4 $\frac{16}{3} : \left(\frac{27}{4} \cdot \frac{16}{9}\right) = \frac{16}{3} : 12 = \frac{16}{3 \cdot 12} = \frac{4}{9}$

1.5 $\left(\frac{27}{42} + 2\frac{20}{42}\right) - \frac{15}{7} \cdot \frac{5}{6} = 3\frac{5}{42} - 1\frac{33}{42} = 1\frac{14}{42} = 1\frac{1}{3}$

1.6 $\frac{1}{5} : \frac{1}{5} - \frac{3}{10} = 1 - \frac{3}{10} = \frac{7}{10}$

1.7

$$\ldots = \left[\left(\frac{24}{7} \cdot \frac{25}{8} - \frac{13}{6} \cdot \frac{45}{13}\right) : 3 + 5\frac{4}{7}\right] : \left(1\frac{21}{28} + \frac{20}{28}\right) =$$

$$= \left[\left(\frac{75}{7} - \frac{15}{2}\right) : 3 + 5\frac{4}{7}\right] : \frac{69}{28} = \left[\left(\frac{150}{14} - \frac{105}{14}\right) : 3 + 5\frac{8}{14}\right] \cdot \frac{28}{69} =$$

$$= \left[1\frac{1}{14} + 5\frac{8}{14}\right] \cdot \frac{28}{69} = \frac{93}{14} \cdot \frac{28}{69} = \frac{31}{1} \cdot \frac{2}{23} = \frac{62}{23} = 2\frac{16}{23}$$

1.8

$$\ldots = 5\frac{1}{5} - 1\frac{4}{5} \cdot \left(1\frac{1}{2} + \frac{7}{3} \cdot \frac{2}{7}\right) + \left(5\frac{23}{21} - 3\frac{14}{21}\right) : \left(\frac{7}{2} \cdot \frac{3}{14}\right) =$$

$$= 5\frac{1}{5} - \frac{9}{5} \cdot \left(1\frac{1}{2} + \frac{2}{3}\right) + 2\frac{9}{21} : \frac{3}{4} =$$

$$= 5\frac{1}{5} - \frac{9}{5} \cdot \frac{13}{6} + \frac{51}{21} \cdot \frac{4}{3} = 5\frac{1}{5} - \frac{39}{10} + \frac{68}{21} = 5\frac{42}{210} - 3\frac{189}{210} + 3\frac{50}{210} = 4\frac{113}{210}$$

1.9

$$\ldots=\left(\frac{15}{4}\cdot\frac{187}{20}-\frac{85}{3}\cdot\frac{7}{40}\right):\left[39\frac{11}{12}-4\frac{1}{12}\cdot4\frac{4}{7}\right]=$$

$$=\left(\frac{561}{16}-\frac{119}{24}\right):\left[39\frac{11}{12}-\frac{49}{12}\cdot\frac{32}{7}\right]=$$

$$=\left(\frac{1683}{48}-\frac{238}{48}\right):\left[39\frac{11}{12}-\frac{56}{3}\right]=\frac{1445}{48}:\left[39\frac{11}{12}-18\frac{8}{12}\right]=$$

$$=\frac{1445}{48}:21\frac{1}{4}=\frac{1445}{48}\cdot\frac{4}{85}=\frac{17}{12}=1\frac{5}{12}$$