

Addition und Subtraktion von Brüchen - Lösung

1. Berechne und kürze das Ergebnis vollständig.

$$\text{a) } \frac{4}{7} - 2\frac{8}{7} = -2\frac{4}{7}$$

$$\text{b) } -3\frac{3}{7}$$

$$\text{c) } 1\frac{1}{9} - \left(4\frac{5}{18} - 2\frac{12}{18}\right) = 1\frac{2}{18} - \left(3\frac{23}{18} - 2\frac{12}{18}\right) = \frac{20}{18} - 1\frac{11}{18} = \frac{20}{18} - \frac{29}{18} = -\frac{1}{2}$$

$$\text{d) } 16\frac{3}{14} - \left(5\frac{9}{21} + 3\frac{1}{2}\right) = 16\frac{3}{14} - \left(5\frac{18}{42} + 3\frac{21}{42}\right) = 16\frac{3}{14} - 8\frac{13}{14} = 7\frac{2}{7}$$

$$\begin{aligned} \text{e) } 7\frac{30}{60} - \left[4\frac{31}{60} + \left(9\frac{17}{12} - 8\frac{9}{12}\right)\right] &= 7\frac{30}{60} - \left[4\frac{31}{60} + 1\frac{8}{12}\right] = 7\frac{30}{60} - \left[4\frac{31}{60} + 1\frac{40}{60}\right] = \\ &= 7\frac{30}{60} - 6\frac{11}{60} = 1\frac{19}{60} \end{aligned}$$

$$\begin{aligned} \text{f) } \left(\frac{17}{24} + \frac{1}{2} - \frac{9}{5}\right) - \frac{5}{12} - \frac{1}{5} &= \left(\frac{85}{120} + \frac{60}{120} - \frac{216}{120}\right) - \frac{5}{12} - \frac{1}{5} = -\frac{71}{120} - \frac{50}{120} - \frac{24}{120} = -\frac{145}{120} = \\ &= -1\frac{25}{120} = -1\frac{5}{24} \end{aligned}$$

$$\text{g) } \frac{14}{15} - \frac{10}{15} - \frac{1}{5} = \frac{4}{15} - \frac{3}{15} = \frac{1}{15}$$

$$\text{h) } 2\frac{15}{40} - \left(2\frac{30}{40} - 1\frac{32}{40}\right) + \left(3\frac{4}{40} + 1\frac{20}{40}\right) = 2\frac{15}{40} - \frac{38}{40} + 4\frac{24}{40} = 6\frac{39}{40} - \frac{38}{40} = 6\frac{1}{40}$$

2. Welche Zahl fehlt?

$$\text{a) } \frac{10}{15} + \frac{4}{15} = \frac{14}{15}$$

$$\text{b) } \frac{11}{3} - \frac{8}{3} = 1$$

$$\text{c) } \frac{7}{3} - \underline{\hspace{2cm}} = \frac{1}{2} \quad \rightarrow \frac{14}{6} - \frac{11}{6} = \frac{3}{6}$$

$$\text{d) } \frac{3}{8} + \frac{3}{8} = \frac{6}{8}$$

$$\text{3. a) } 1 - \left(\frac{3}{7} + \frac{5}{12}\right) = 1 - \left(\frac{36}{84} + \frac{35}{84}\right) = 1 - \frac{71}{84} = \frac{13}{84}$$

$$\text{b) } \frac{3}{7} \text{ von } 4,2 \text{ m}^2 = \frac{3}{7} \cdot 420 \text{ dm}^2 = 180 \text{ dm}^2 = 1,8 \text{ m}^2$$

Das Karottenbeet ist 1,8m² groß.