

ס'מים שג'מים עם פ'רמ'ס ל'ים

פתור את התרגילים הבאים:

$$80. \left(\frac{3}{8} \div \frac{a}{4}\right) \cdot \frac{1}{6b} = \left(\frac{3}{8} \cdot \frac{4}{a}\right) \cdot \frac{1}{6b} = \frac{3}{2a} \cdot \frac{1}{6b} = \frac{3}{12ab} = \frac{1}{4ab}$$

$$81. \frac{\frac{4a}{7} + \frac{14}{a}}{\frac{3b}{2} + \frac{2b}{3}} = \frac{\frac{4a \cdot 2}{7 \cdot 2} + \frac{a}{14}}{\frac{3b \cdot 3}{2 \cdot 3} + \frac{2b \cdot 2}{3 \cdot 2}} = \frac{\frac{8a+a}{14}}{\frac{9b+4b}{6}} = \frac{\frac{9a}{14}}{\frac{13b}{6}} = \frac{9a \cdot 6}{14 \cdot 13b} = \frac{27a}{35b}$$

$$82. \frac{4y}{12x} + \frac{3}{2x} = \left(\frac{4y}{12x}\right) + \left(\frac{3}{2x}\right) = \frac{4y \cdot 1}{3 \cdot 12x} + \frac{3 \cdot 5y}{2x \cdot 1} = \frac{y}{3x} + \frac{15y}{2x} = \frac{y}{6x} + \frac{15y \cdot 3}{2x \cdot 3} = \frac{y+45y}{6x} = \frac{46y}{6x} = \frac{23y}{3x}$$

$$83. \frac{\frac{3mn}{2} - \frac{2mn}{5}}{\frac{5mn}{6a} + \frac{6mn}{5a}} = \frac{\frac{3mn \cdot 5}{2 \cdot 5} - \frac{2 \cdot 2mn}{5 \cdot 2}}{\frac{5mn \cdot 6}{6a \cdot 5} + \frac{6mn \cdot 6}{5a \cdot 6}} = \frac{\frac{15mn-4mn}{10}}{\frac{5mn+6mn}{30a}} = \frac{\frac{11mn}{10}}{\frac{11mn}{30a}} = \frac{11mn \cdot 30a}{10 \cdot 11mn} = \frac{3a}{1} = 3a$$

$$84. \left(\frac{6}{7}\right)x - \left(\frac{4x}{3} - \frac{5x}{12}\right) = \frac{6 \cdot 7}{7 \cdot 7}x - \left(\frac{4x \cdot 4}{3 \cdot 4} - \frac{5x}{12}\right) = 2x - \left(\frac{16x}{12} - \frac{5x}{12}\right) = 2x - \frac{11x}{12} = \frac{24x}{12} - \frac{11x}{12} = \frac{13x}{12}$$

$$85. \left(\frac{7b}{14} - \frac{4b}{16}\right) \cdot \left(\frac{7a}{10b} + \frac{3a}{5b}\right) \cdot \left(\frac{1}{a} + \frac{3}{13a}\right) = \left(\frac{b}{2} - \frac{1}{4}b\right) \cdot \left(\frac{7a}{10b} + \frac{3a \cdot 2}{5b \cdot 2}\right) \cdot \left(\frac{1 \cdot 13}{a \cdot 13} + \frac{3}{13a}\right)$$

$$\left(\frac{b \cdot 2}{2 \cdot 2} - \frac{b}{4}\right) \cdot \left(\frac{7a}{10b} + \frac{6a}{10b}\right) \cdot \left(\frac{13}{13a} + \frac{3}{13a}\right) = \left(\frac{2b-b}{4}\right) \cdot \left(\frac{7a+6a}{10b}\right) \cdot \left(\frac{13+3}{13a}\right) = \frac{b \cdot 13a \cdot 16}{4 \cdot 10b \cdot 13a} = \frac{2}{5}$$

$$86. \left(\frac{18}{21}\right) \left(\frac{6xyz}{4}\right) \left(\frac{3xy}{14}\right) = \frac{18 \cdot 14}{21 \cdot 6a} \cdot \frac{6xyz \cdot 1}{4 \cdot 3xy} = \frac{18 \cdot 14 \cdot 6 \cdot xyz}{21 \cdot 6a \cdot 4 \cdot 3 \cdot xy} = \frac{z}{a}$$

$$87. \left(\frac{a}{2} \div \frac{3}{4b}\right) \div \frac{6ab}{7} - \frac{25y}{18} \cdot \frac{3x}{5} = \left(\frac{a}{2} \cdot \frac{4b}{3}\right) \div \frac{6ab}{7} - \frac{xy}{5} = \frac{2ab}{3} \div \frac{6ab}{7} - \frac{xy}{5}$$

$$= \frac{2ax}{3} \cdot \frac{7}{6ab} - \frac{xy}{5} = \frac{5}{9} - \frac{xy}{5} = \frac{7 \cdot 5}{9 \cdot 5} - \frac{xy \cdot 9}{5 \cdot 9} = \frac{35-9xy}{45}$$