

reklama



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135/1

$$a) \frac{2}{3} + \frac{5}{7} - \frac{1}{4} = \frac{2 \cdot 28 + 5 \cdot 12 - 21}{84} = \frac{56 + 60 - 21}{84} = \frac{95}{84} = 1 \frac{11}{84}$$

$$b) \frac{1}{9} + \frac{3}{8} - \frac{2}{7} = \frac{1 \cdot 8 \cdot 7 + 3 \cdot 9 \cdot 7 - 2 \cdot 9 \cdot 8}{504} = \frac{56 + 189 - 144}{504} = \frac{56 + 45}{504} = \frac{101}{504}$$

$9 \cdot 8 = 72 \cdot 7 = 490 + 14 = 504$   
 $3 \cdot 9 = 27 \cdot 7 = 140 + 49 = 189$   
 $9 \cdot 8 = 72 \cdot 2 = 144$

$$c) \frac{1}{10} - \frac{3}{4} + \frac{4}{9} = \frac{149 - 3 \cdot 10 \cdot 9 + 4 \cdot 10 \cdot 4}{360} = \frac{36 - 270 + 160}{360}$$

$$\frac{36 - 110}{360} = -\frac{74}{360} = -\frac{37}{180}$$

$$d) \frac{2}{5} - \frac{1}{10} - \frac{3}{15} = \frac{26 - 13 - 32}{30} = \frac{12 - 3 - 6}{30} = \frac{3}{30} = \frac{1}{10}$$

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135/1

$$c) \frac{7}{8} - \frac{5}{4} - \frac{5}{6} = \frac{7 \cdot 3 - 5 \cdot 6 - 5 \cdot 4}{24} = \frac{21 - 30 - 20}{24} = -\frac{29}{24} =$$

$$-\frac{15}{24}$$

$$f) \frac{2}{3} - \frac{3}{4} - \frac{4}{15} = \frac{2 \cdot 20 - 3 \cdot 15 - 4 \cdot 4}{60} =$$

$$\frac{40 - 45 - 16}{60} = -\frac{21}{60} = -\frac{7}{20}$$

135/2

$$a) 1 - \frac{2}{5} - \frac{3}{4} > 0 \quad \frac{20 - 2 \cdot 4 - 3 \cdot 5}{20} > 0 \quad \frac{20 - 8 - 15}{20} > 0$$

$$-\frac{3}{20} > 0 \quad \text{NE}$$

$$b) 2 - \frac{3}{7} - \frac{5}{4} > 0 \quad \frac{2 \cdot 28 - 3 \cdot 4 - 5 \cdot 7}{28} = \frac{56 - 12 - 35}{28} > 0$$

$$\frac{9}{28} > 0 \quad \text{ANO}$$

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135/2

$$d) 2 - 1\frac{2}{3} - 1\frac{2}{5} > 0 \quad 2 - \frac{5}{3} - \frac{7}{5} > 0 \quad \frac{30 - 5 \cdot 5 - 7 \cdot 3}{15} \Rightarrow 0$$

$$\frac{30 - 25 - 21}{15} = -\frac{16}{15} > 0 \quad \text{NE}$$

$$e) 5 - 2\frac{3}{7} - 1\frac{7}{8} > 0 \quad 5 - \frac{17}{7} - \frac{15}{8} > 0 \quad \frac{5 \cdot 56 - 17 \cdot 8 - 15 \cdot 7}{56}$$

$$\frac{280 - 136 - 105}{56} = \frac{39}{56} > 0 \quad \text{ANO}$$

a) 135/3

$$\frac{425}{600} = \frac{17}{24} > \frac{130}{300} = \frac{260}{600}$$

$$b) \frac{600}{840} = \frac{15}{21} > \frac{180}{280} = \frac{540}{840}$$

$$d) 0,34 > \frac{150}{800} \quad 0,34 = \frac{34}{100} = \frac{272}{800}$$

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135/4

$$a) \frac{5}{7} \cdot \left( \frac{3}{4} - \frac{1}{5} \right) = \frac{5}{7} \cdot \frac{15-4}{20} = \frac{5^1}{7} \cdot \frac{11}{20_4} = \frac{11}{28}$$

$$b) \left( \frac{1}{7} - \frac{2}{5} \right) \cdot \frac{3}{4} = \frac{5-14}{35} \cdot \frac{3}{4} = -\frac{9}{35} \cdot \frac{3}{4} = -\frac{27}{140}$$

$$c) \left( 1 - \frac{7}{5} \right) \cdot \frac{2}{7} = \left( \frac{5-7}{5} \right) \cdot \frac{2}{7} = -\frac{2}{5} \cdot \frac{2}{7} = -\frac{4}{35}$$

$$d) \frac{9}{6} \cdot \left( 2 - \frac{8}{3} \right) = \frac{9}{6} \cdot \left( \frac{2}{1} - \frac{8}{3} \right) = \frac{9}{6} \cdot \frac{6-8}{3} = \frac{9^3}{6_3} \cdot \left( -\frac{2}{3} \right) = -1$$

$$e) 4 - \frac{1}{2} \cdot \left( 2 - \frac{3}{4} \right) = 4 - \frac{1}{2} \cdot \frac{8-3}{4} = 4 - \frac{1}{2} \cdot \frac{5}{4} = 4 - \frac{5}{8} = \frac{32-5}{8} = \frac{27}{8} = 3\frac{3}{8}$$

$$f) 7 - \frac{2}{9} \cdot \left( \frac{9}{4} - \frac{1}{2} \right) = 7 - \frac{2}{9} \cdot \frac{9-2}{4} = 7 - \frac{2}{9} \cdot \frac{7}{4_2} = 7 - \frac{7}{18} =$$

$$\frac{126-7}{18} = \frac{119}{18} = 6\frac{11}{18}$$

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$$135/4$$

$$g) \left(4\frac{1}{2} - 5\frac{3}{4}\right) \cdot \frac{6}{5} = \left(\frac{9}{2} - \frac{23}{4}\right) \cdot \frac{6}{5} = \frac{18-23}{4} \cdot \frac{6}{5} = \frac{-5 \cdot 6}{4 \cdot 5} = \underline{\underline{-\frac{3}{2}}}$$

$$h) 1\frac{7}{9} \cdot \left(\frac{3}{5} - \frac{2}{7}\right) = \frac{16}{9} \cdot \frac{21-10}{35} = \frac{16}{9} \cdot \frac{11}{35} = \underline{\underline{\frac{176}{315}}}$$

$$i) 9\frac{7}{10} \cdot \left(\frac{3}{4} - 1\frac{2}{5}\right) = \frac{7}{10} \cdot \left(\frac{3}{4} - \frac{7}{5}\right) = \frac{7}{10} \cdot \frac{15-28}{20} = \frac{7}{10} \cdot \left(\frac{-13}{20}\right) =$$

$$-\frac{91}{200}$$

$$j) 9\frac{8}{10} \cdot \left(1\frac{7}{11} - 4\frac{2}{3}\right) = \frac{8}{10} \cdot \left(\frac{18}{11} - \frac{14}{3}\right) =$$

$$\frac{8}{10} \cdot \frac{54-154}{33} = \frac{8}{10} \cdot \left(-\frac{100}{33}\right) = -\frac{80}{33} = \underline{\underline{-2\frac{14}{33}}}$$

$$k) 6 \cdot \left(2\frac{5}{6} + 1\right) = 6 \cdot \left(\frac{17}{6} + \frac{6}{6}\right) = 6 \cdot \frac{23}{6} = \underline{\underline{23}}$$

$$l) \left(12 - \frac{4}{5}\right) \cdot \left(\frac{5}{8} - \frac{1}{4}\right) = \frac{60-4}{5} \cdot \frac{5-2}{8} = \frac{56}{5} \cdot \frac{3}{8} = \frac{21}{5} = \underline{\underline{4\frac{1}{5}}}$$

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136/6

$$a) 5 - 6 \cdot (3 - 7) < 0 \quad \text{NE} \quad 5 - 6 \cdot (-4) = 5 - (-24) = 5 + 24 = 29 > 0$$

$$b) 12 - 3 \cdot (8 - 15) < 0 \quad \text{NE} \quad 12 - 3 \cdot (-7) = 12 + 21 = 33 > 0$$

$$c) (6 - 8) - (9 - 24) < 10 \quad \text{NE} \quad (-2) - (-15) = -2 + 15 = 13 > 10$$

$$d) (3 - 28) - (11 - 50) < 0 \quad \text{NE} \quad (-25) - (-39) = -25 + 39 = 14 > 0$$

$$e) 2 \cdot (7 - 19) > 3(5 - 6) \quad -24 > -3 \quad \text{NE}$$

$$f) 9 \cdot (6 - 10) > 5 \cdot (11 - 20) \quad -36 > -45 \quad \text{ANO}$$

$$g) -5 \cdot (4 - 7) - 2 \cdot (3 - 9) > 0 \\ -5 \cdot (-3) - 2 \cdot (-6) = 15 + 12 > 0 \Rightarrow 27 > 0 \quad \text{ANO}$$

$$h) 6 \cdot (-2 - 15) - 3(7 - 11) > 0 \quad \text{NE} \\ 6 \cdot (-17) - 3 \cdot (-4) \Rightarrow -102 + 12 = -90 < 0$$

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136/8

$$a) \frac{\frac{1}{4}}{\frac{5}{7}} = \frac{1}{4} \div \frac{5}{7} = \frac{1}{4} \cdot \frac{7}{5} = \frac{7}{20}$$

$$b) \frac{\frac{1}{7} + \frac{1}{5}}{\frac{2}{5} + \frac{1}{4}} = \frac{\frac{5+7}{35}}{\frac{8+5}{20}} = \frac{12}{7 \cdot 35} \cdot \frac{20}{13} = \frac{48}{91}$$

$$c) 2 \cdot \frac{1 + \frac{1}{5}}{2 + \frac{3}{4}} = 2 \cdot \frac{\frac{5+1}{5}}{\frac{8+3}{4}} = 2 \cdot \frac{6}{5} \cdot \frac{4}{11} = \frac{48}{55}$$

$$d) \frac{\frac{2}{5}}{\frac{3}{4}} \cdot \frac{2}{5} \cdot \frac{4}{8} \cdot \frac{8}{7} = \frac{8}{5} = \frac{13}{5}$$

$$e) \frac{1 - \frac{4}{5}}{1 + \frac{4}{5}} \cdot 5 = \frac{5-4}{5} \div \frac{5+4}{5} \cdot 5 = \frac{1}{5} \cdot \frac{5}{9} \cdot 5 = \frac{5}{9}$$

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136/8

$$f) \frac{2\frac{3}{4} - 1\frac{1}{2}}{\frac{1}{4} - 2} = \frac{\frac{11}{4} - \frac{3}{2}}{\frac{1-8}{4}} = \frac{11-6}{4} \cdot \frac{4}{1-8} = \frac{5}{7}$$

136/9

$$a) 5,7 \cdot \left(3\frac{1}{2} - 1\frac{1}{4}\right) = \frac{57}{10} \cdot \left(\frac{7}{2} - \frac{5}{4}\right) = \frac{57}{10} \cdot \frac{14-5}{4} =$$

$$\frac{57}{10} \cdot \frac{9}{4} = \frac{513}{40} = \frac{12825}{1000} = \underline{\underline{12,825}}$$

$$b) 13,6 \cdot \left(2\frac{4}{5} - \frac{3}{10}\right) = \frac{136}{10} \cdot \left(\frac{12}{5} - \frac{3}{10}\right) =$$

$$\frac{136}{10} \cdot \frac{24-3}{10} = \frac{136}{10} \cdot \frac{21}{10} = \frac{2856}{10} = \underline{\underline{285,6}}$$



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136/10

$$a) 2\frac{3}{4} - 0,25 - \frac{1}{2} = \frac{11}{4} - \frac{25}{100} - \frac{1}{2} = \frac{275 - 25 - 50}{100} = \frac{200}{100} = \underline{\underline{2}}$$

$$b) 5\frac{1}{10} - 3\frac{1}{2} - \frac{7}{4} = \frac{51}{10} - \frac{7}{2} - \frac{7}{4} = \frac{102 - 70 - 35}{20} = \underline{\underline{\frac{3}{20}}}$$

$$c) 2,7 - (3,6 - 1,5) = 2,7 - 2,1 = \underline{\underline{0,6}}$$

$$d) 5,9 - (4\frac{2}{5} - 2,7) = 5,9 - (4,4 - 2,7) = 5,9 - 1,7 = \underline{\underline{4,2}}$$

$$4\frac{1}{5} = \frac{21}{5} = \frac{44}{10} = 4,4$$

136/11

$$\frac{7}{26} : \frac{12}{95} = \frac{7}{10} : \frac{26}{10} = \frac{7}{26} \quad \frac{7}{26} : \frac{12}{5} = \frac{7}{26} \cdot \frac{5}{12} =$$

$$\frac{12}{10} \cdot \frac{5}{10} = \frac{12}{5}$$

$$\frac{35}{312}$$

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136/11

$$b) \frac{7,8}{0,4} : \frac{3,5}{0,7} = \frac{78}{4} : \frac{35}{7} = \frac{78}{4} \cdot \frac{7}{35} = \frac{78}{20} = 3 \frac{18}{20}$$

136/12

$$a) [4,8 : (-0,2)] : 1,5 = -24 : 1,5 = -16$$

$$4,8 : 0,2 = 1 \cdot 10 \Rightarrow 48 : 2 = 24$$

$$24 : 1,5 = 1 \cdot 10 \Rightarrow \frac{240}{90} : 15 = 16$$

$$b) (3,6 : 0,8) : (-4) = 4,5 : (-4) =$$

$$3,6 : 0,8 = 1 \cdot 10 \Rightarrow \frac{36}{40} : 8 = \frac{4,5}{10} : 4 = 1,125$$

$$c) [(-0,42) : 1,2] \cdot (-0,3) = -0,35 \cdot (-0,3) =$$

$$0,42 : 1,2 = 1 \cdot 10$$

$$\frac{4,2}{42} : 12 = 0,35$$

$$0,35 \cdot (-0,3) = -0,105$$

$$\frac{0,35}{0,3} = 0,105$$

$$d) (5,6 : 2,8) \cdot 0,5 = 2 \cdot 0,5 = 1$$

$$5,6 : 2,8 = 1 \cdot 10$$

$$56 : 28 = 2$$

$$\frac{0,5}{10} = 0,05$$

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137/2

↑ 2h ..... 30km ↑  
 ↑ 2,5h ..... x km ↑

$$x = \frac{2,5 \cdot 30}{2} = \underline{\underline{37,5 \text{ km}}}$$

137/3

↑ 1cm ..... 20km ↑  
 ↑ x cm ..... 125km ↑

$$1 : 20 = x : 125$$

$$\Rightarrow 125 : 20 = 6,25$$

$$x = \frac{125 \cdot 1}{20} = \underline{\underline{6,25 \text{ cm}}}$$

137/6

P.K. .... 2 000 000      2 000 000 : 1 000 000

P.N. .... 1 000 000      2 : 1

600 000      2+1 = 3      600 000 : 3 = 200 000

⇒ P.K. 2 · 200 000 = 400 000

P.N. 1 · 200 000 = 200 000

137/8 ↑ 10m<sup>2</sup> ..... 1kg nářetn ↑  
 ↑ 25m<sup>2</sup> ..... x kg ↑

$$x = \frac{25 \cdot 1}{10} = 2,5 \text{ kg nářetn}$$

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137/9

$\uparrow$  175 cm ..... 4 m (stín)  $\uparrow$   
 $\uparrow$  x cm ..... 10 m  $\uparrow$

$$x : 175 = 10 : 4$$

$$x = \frac{175 \cdot 10}{4} = 437,5 \text{ cm} = \underline{\underline{4,375 \text{ m}}}$$

137/10

1:2  $\Rightarrow$  2x delší frasa

p: 5 km  $\Rightarrow$  10 km

137/11

$\uparrow$  30 km ..... 20 min  $\uparrow$   
 $\uparrow$  60 km ..... x  $\uparrow$

$$x : 20 = 60 : 30$$

$$x = \frac{20 \cdot 60}{30} = \underline{\underline{40 \text{ min}}}$$

137/13

$\uparrow$  2 kg odpadů ..... 1,5 kg bio  $\uparrow$   
 $\uparrow$  6 000 kg odpadů ..... x kg  $\uparrow$

$$x : 1,5 = 6000 : 2$$

$$x = \frac{1,5 \cdot 6000}{2} = 4500 \text{ kg} = 4,5 \text{ t bio}$$

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137/15

řízáků : 2 řízáky  $\Rightarrow$   $P:2 = 4x$  se zmenší

137/16

$\uparrow$  400km ..... 28L  $\uparrow$   
 $\uparrow$  50km ..... xL  $\uparrow$

$$x : 28 = 50 : 400$$

$$x = \frac{50 \cdot 28}{400} = \underline{\underline{3,5L}}$$

137/17

$\uparrow$  3h ..... 5mm  $\uparrow$   
 $\uparrow$  24h ..... x mm  $\uparrow$

1 den = 24h (-)

$$x = \frac{24 \cdot 5}{3} = \underline{\underline{40mm = 4cm}}$$

137/18

recept pro 4 lidi  $\Rightarrow$  my chceme 10 osob

$10 : 4 = 2,5 \Rightarrow$  vše vynásobit číslem 2,5

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137/19

250 : 375 : 500 : 375 : 250

Po UT ST OT PA'

50 : 75 : 100 : 75 : 50 ( : 5 )

10 : 15 : 20 : 15 : 10 ( : 5 )

2 : 3 : 4 : 3 : 2 ( : 5 )

137/20

600 000      1:2:3  $\Rightarrow$  1+2+3 = 6

600 000 : 6 = 100 000

výhra ... 100 000

náklady ... 200 000

charita ... 300 000