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① a) $517, 14/2, 10000000$

b) $-2, 0, 517, 14/2, 10000000$

c) $9, 25, \frac{632}{75}, 0, \bar{33}, 125,666, -2, 0, 517, 14/2, 10000000$

d) $\sqrt{5}, -\sqrt{4}, \sqrt{2} - 1$

② ^{a)} $\frac{1}{5} + \frac{9}{5} = \frac{10}{5} = 2$

b) ^(.7) $\frac{1}{2} + \frac{5}{7} - 1 = \frac{7}{14} + \frac{10}{14} - \frac{14}{14} = \frac{17}{14} - \frac{14}{14} = \frac{3}{14}$

c) ^(.5) $\frac{5}{4} - \frac{4}{5} = \frac{25}{20} - \frac{16}{20} = \frac{9}{20}$

d) $\frac{3}{2} + \frac{5}{14} + \frac{8}{35} =$

$$\frac{3}{2} + \frac{5}{14} + \frac{8}{36}$$

$$\begin{array}{r|l} 2, 14, 35 & 2 \\ 1, 7, 35 & 5 \\ 1, 7, 7 & 7 \\ 1, 1, 1 & 70 \end{array}$$

$$= \frac{105 + 25 + 16}{70} = \frac{146}{70} = \frac{73}{35}$$

$$e) \frac{\frac{5}{7}}{\frac{7}{3}} = \frac{5}{7} \cdot \frac{3}{7} = \frac{15}{49}$$

$$f) \frac{2.5}{77} = \frac{10}{49}$$

$$g) \frac{2}{5} \cdot \frac{25}{9} \cdot \frac{7}{4} = \frac{350}{180} = \frac{35}{18}$$

$$h) \frac{13}{20} - \frac{21}{5} - \frac{5}{24} = \frac{15}{2} = \frac{273}{10} - 10 = \frac{928}{360} - \frac{10}{360} = \frac{918}{360} = \frac{49}{20}$$

$$i) \frac{-120}{108} : \frac{5}{(-36)} = \frac{-24}{-3} = 8$$

$$j) 34 / (24 / (-144 / (-12))) = 34 / (24 / 12) = 34 / 2 = 17$$

$$3) \begin{array}{r} 1013 \\ 9 \overline{) 033} \\ 90 \\ 43 \end{array}$$

$$b) \begin{array}{r} 205 \\ 20 \overline{) 04} \\ 400 \end{array}$$

$$c) \begin{array}{r} 514 \\ 4 \overline{) 125} \\ 40 \\ 85 \\ 80 \\ 50 \\ 40 \\ 10 \end{array}$$

$$d) \begin{array}{r} 30146 \\ 16 \overline{) 140} \\ 160 \\ 128 \\ 120 \\ 112 \\ 80 \\ 80 \\ 00 \end{array}$$

$$e) \begin{array}{r} 30120 \\ 20 \overline{) 100} \\ 100 \\ 100 \\ 000 \end{array}$$

$$f) \begin{array}{r} 3017 \\ 28 \overline{) 14} \\ 280 \\ 140 \\ 60 \\ 56 \\ 40 \\ 36 \\ 40 \\ 50 \\ 49 \\ 10 \end{array}$$

$$g) \begin{array}{r} 30111 \\ 22 \overline{) 80} \\ 44 \\ 36 \end{array}$$

$$h) \begin{array}{r} 2013 \\ 18 \overline{) 20} \\ 36 \end{array}$$

$$i) \begin{array}{r} 300150 \\ 300 \overline{) 006} \\ 000 \end{array}$$

$$a) \begin{array}{r} 42 \overline{) 13} \\ -3 \\ \hline 12 \\ -12 \\ \hline 00 \end{array}$$

$$b) \begin{array}{r} 92 \overline{) 11,5} \\ -8 \\ \hline 12 \\ -8 \\ \hline 40 \\ -40 \\ \hline 00 \end{array}$$

$$c) \begin{array}{r} 65 \overline{) 5} \\ -5 \\ \hline 15 \\ -15 \\ \hline 00 \end{array} \quad 13,4 = 52$$

$$d) \frac{9,63}{7} = \frac{567}{7} = 81$$

$$5) \begin{array}{l} \frac{3}{8} = 45 \\ \frac{5}{8} = 75 \\ \hline 1 = 15 \end{array} \quad \begin{array}{l} 45 \\ + 75 \\ \hline 120 \text{ years} \end{array}$$

$$6) \begin{array}{l} 5 \cdot x = 350 \\ x = \frac{350}{5} = \frac{350 \cdot 6}{5} = 420 \\ 420 \cdot 4 = 240 \end{array}$$

*Questão Famlada

$$8) \begin{array}{l} \frac{8}{9} \cdot x = 104 \\ x = \frac{104}{\frac{8}{9}} = \frac{104 \cdot 9}{8} = 117 \end{array}$$

$$9) a) \frac{1}{5} + \frac{3}{4} = \frac{4}{20} + \frac{15}{20} = \frac{19}{20} \quad b) \frac{20}{20} - \frac{19}{20} = \frac{1}{20}$$

$$10) a) \frac{1}{3} \left(\frac{3}{5} + \frac{1}{2} \right) = \frac{1}{3} \left(\frac{6}{10} + \frac{5}{10} \right) = \frac{1}{3} \left(\frac{11}{10} \right) = \frac{11}{30}$$

$$b) \frac{5}{2} \cdot \left(\frac{4}{3} - \frac{3}{4} \right) = \frac{5}{2} \left(\frac{16}{12} - \frac{9}{12} \right) = \frac{5}{2} \left(\frac{7}{12} \right) = \frac{35}{24}$$

$$c) \left(\frac{5}{4} - \frac{1}{2} \right) \cdot \left(\frac{1}{3} + \frac{2}{5} \right) = \left(\frac{5}{4} - \frac{2}{4} \right) \cdot \left(\frac{5}{15} + \frac{6}{15} \right) = \frac{3}{4} \cdot \frac{11}{15} = \frac{33}{60} = \frac{11}{20}$$

$$d) \left(\frac{1}{4} + \frac{1}{2} \right) \div \left(\frac{3}{2} + 3 \right) = \left(\frac{1}{4} + \frac{2}{4} \right) \div \left(\frac{3}{2} + \frac{6}{2} \right) = \frac{3}{4} \div \frac{9}{2} = \frac{6}{36} = \frac{1}{6}$$

$$e) \left(\frac{1}{2} - \frac{1}{6} \right) \div \left(\frac{1}{3} - \frac{1}{4} \right) = \left(\frac{3}{6} - \frac{1}{6} \right) \div \left(\frac{4}{12} - \frac{3}{12} \right) = \frac{2}{6} \div \frac{1}{12} = \frac{24}{6} = 4$$

$$f) \frac{5}{6} - \frac{4}{5} - \frac{7}{15} + \frac{1}{2} + \frac{1}{3} = \frac{25}{30} - \frac{24}{30} - \frac{14}{30} + \frac{15}{30} + \frac{10}{30} = \frac{12}{30} = \frac{2}{5}$$

$$11) a) 7 \cdot \frac{2}{3} + 16 \cdot \frac{5}{12} = \frac{14}{3} + 4 \cdot \frac{5}{3} = \frac{14}{3} + \frac{20}{3} = \frac{34}{3} \approx 11,33$$

$$b) 5 - \left(2 \div \frac{5}{3} \right) = 5 - \frac{6}{5} = \frac{25}{5} - \frac{6}{5} = \frac{19}{5} = 3,8$$

$$12) a) (-1, 1) \cup [1, +\infty)$$

$$\begin{array}{ccccccc} -1 & 0 & 1 & & & & \\ \hline & 0 & 0 & 1 & & & \end{array} \quad (-1, 1)$$

$$\begin{array}{ccccccc} & & 1 & 2 & 3 & & \\ \hline & & 1 & 1 & 1 & 0 & \end{array} \quad [1, +\infty)$$

$$\begin{array}{ccccccc} -1 & & 1 & 2 & 3 & & \\ \hline & 0 & 1 & 1 & 1 & 0 & \end{array} \quad (-1, 1) \cup [1, +\infty)$$

$$b) \left(-1, \frac{2}{5} \right) \cap \left(0, \frac{3}{4} \right)$$

$$\begin{array}{ccccccc} -1 & 0 & \frac{2}{5} & & & & \\ \hline & 0 & 0 & 1 & & & \end{array} \quad \left(-1, \frac{2}{5} \right)$$

$$\begin{array}{ccccccc} -1 & 0 & \frac{1}{4} & & & & \\ \hline & 0 & 0 & 1 & & & \end{array} \quad \left(0, \frac{3}{4} \right)$$

$$\begin{array}{ccccccc} 0 & \frac{2}{5} & & & & & \\ \hline & 0 & 0 & 1 & & & \end{array} \quad \left(-1, \frac{2}{5} \right) \cap \left(0, \frac{3}{4} \right)$$

$$c) [2, 3] \cap (3, 6)$$

$$\begin{array}{ccccccc} -3 & -2 & -1 & 0 & 1 & 2 & 3 \\ \hline & 1 & 1 & 1 & 1 & 1 & 1 \end{array} \quad [2, 3]$$

$$\begin{array}{ccccccc} 0 & 1 & 2 & 3 & 4 & 5 & 6 \\ \hline & 1 & 1 & 1 & 0 & 0 & 0 \end{array} \quad (3, 6)$$

$$\begin{array}{ccccccc} 0 & & & & & & \\ \hline & 1 & & & & & \end{array} \quad [2, 3] \cap (3, 6)$$

$$d) [1, 2] \cup [3, \frac{17}{2}]$$

$$\begin{array}{ccccccc} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & \frac{17}{2} \\ \hline & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{array} \quad [1, 2]$$

$$\begin{array}{ccccccc} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & \frac{17}{2} \\ \hline & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{array}$$

$$\begin{array}{ccccccc} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & \frac{17}{2} \\ \hline & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{array} \quad [1, 2] \cup [3, \frac{17}{2}]$$

$$13) A = (-1, 5] \quad B = \left[\frac{1}{2}, \sqrt{5} \right] \quad C = (3, \infty)$$

$$A \cup B$$

$$\begin{array}{ccccccc} -1 & 0 & 1 & 2 & 3 & 4 & 5 \\ \hline & 0 & 1 & 1 & 1 & 1 & 1 \end{array} \quad (-1, 5]$$

$$\begin{array}{ccccccc} -1 & 0 & 1 & 2 & 3 & 4 & 5 \\ \hline & 0 & 1 & 1 & 1 & 1 & 1 \end{array} \quad \left[\frac{1}{2}, \sqrt{5} \right]$$

$$\begin{array}{ccccccc} -1 & 0 & 1 & 2 & 3 & 4 & 5 \\ \hline & 0 & 1 & 1 & 1 & 1 & 1 \end{array} \quad (-1, 5] \cup \left[\frac{1}{2}, \sqrt{5} \right]$$

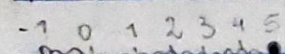
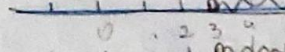
$$B \cup C$$

$$\begin{array}{ccccccc} \frac{1}{2} & 2 & 5 & 3 & & & \\ \hline & 1 & 1 & 1 & 1 & & \end{array} \quad \left[\frac{1}{2}, \sqrt{5} \right]$$

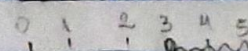
$$\begin{array}{ccccccc} 1 & 2 & 3 & & & & \\ \hline & 1 & 1 & 1 & & & \end{array} \quad (3, \infty)$$

$$\begin{array}{ccccccc} 1 & 2 & 3 & & & & \\ \hline & 1 & 1 & 1 & & & \end{array}$$

A ∩ C

 $(-1, 5]$  $(3, \infty)$  $(-1, 5] \cap (3, \infty)$

B ∩ C

 $[\frac{1}{2}, 5]$  $(3, \infty)$  $[\frac{1}{2}, 5] \cap (3, \infty)$

14) a) $A = (2, +\infty)$

b) $C = (-\infty, -4]$

c) $E = [-\pi, -3]$

d) $G = (2, 1)$

e) $I = (-\infty, -3]$ or $(0, 5]$

f) $K = (-\infty, -2]$ or $(1, +\infty)$

g) $M = (-\infty, 0]$ or $(\sqrt{2}, \pi)$ or $(\sqrt{2}, +\infty)$

15) a) $(2, 6)$

b) $(-\infty, 2] \cup [6, \infty)$

c) $(\frac{2}{3}, \infty)$

d) $(-\infty, 12]$

e) $[-1, 5]$

f) $(0, \infty)$

g) $(-\infty, 0]$

h) $[-6, -3] \cup (-1, \infty)$

i) $(-\infty, 0) \cup (1, 2) \cup (3, \infty)$

j) $[0, 1] \cup [2, 3]$

16) $\frac{1}{2} - 3 \left(\frac{1}{4} - 0, \bar{3} \right) + 0,125 = \frac{1}{2} - 3 \left(\frac{1}{4} - \frac{1}{3} \right) + \frac{1}{8}$

$0,1\bar{6} - \left(0,25 - \frac{3}{4} \right) + 1 = \frac{1}{6} - \left(\frac{1}{4} - \frac{3}{4} \right) + 1$

$= \frac{1}{2} - 3 \left(\frac{3-4}{4 \cdot 12} \right) + \frac{1}{8} = \frac{1}{2} - 3 \left(\frac{-1}{12} \right) + \frac{1}{8} = \frac{1}{2} + \frac{3 \cdot 1}{12} + \frac{1}{8} = \frac{1}{2} + \frac{1}{4} + \frac{1}{8}$

$\frac{1}{6} - \left(\frac{-2}{4} \right) + 1 = \frac{1}{6} - \left(\frac{-1}{2} \right) + 1 = \frac{1}{6} + \frac{1}{2} + 1 = \frac{1}{6} + \frac{1}{2} + 1$

$= \frac{1}{6} + \frac{2}{6} + \frac{6}{6} = \frac{9}{6} = \frac{3}{2} = \frac{3}{2} \cdot \frac{3}{3} = \frac{9}{6}$