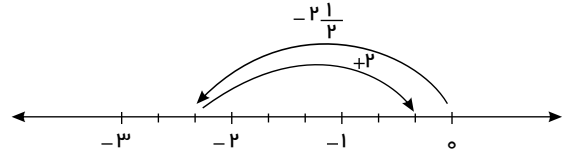
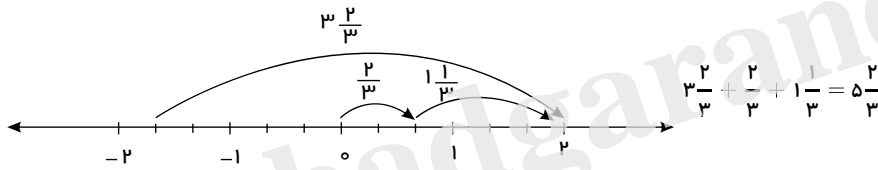
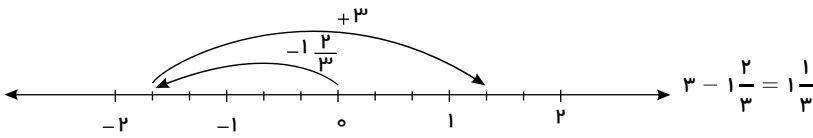


پاسخنامه تشریحی

$$-2\frac{1}{3} + 2 = -\frac{1}{3}$$



$$\frac{-32 \times (-49) \times 66}{-44 \times 21 \times (-16)} = +\frac{\cancel{32}^7 \times \cancel{49}^7 \times \cancel{66}^6}{\cancel{44}^4 \times \cancel{21}^3 \times \cancel{16}^4} = +7$$



الف) $-4 + 1\frac{1}{2} + 2\frac{1}{5} = -4 + \frac{2(\times 5)}{2(\times 5)} + \frac{11(\times 2)}{5(\times 2)}$
 $= -\frac{4(\times 10)}{1(\times 10)} + \frac{15}{10} + \frac{22}{10} = \frac{-40 + 37}{10} = \frac{-3}{10}$

ب) $(-\frac{4}{5}) \div [\frac{1}{3} - (-\frac{4}{5})] = -\frac{4}{5} \div [\frac{1}{3} + \frac{4}{5}] = -\frac{4}{5} \div \frac{17}{15} = -\frac{4}{5} \times \frac{15}{17} = -\frac{60}{119}$

ج) $\frac{2\frac{2}{3} - 1\frac{1}{2}}{3\frac{1}{4} + 4\frac{1}{5}} = \frac{\frac{8}{3} - \frac{3}{2}}{\frac{13}{4} + \frac{21}{5}} = \frac{\frac{16}{6} - \frac{9}{6}}{\frac{65}{20} + \frac{84}{20}} = \frac{\frac{7}{6}}{\frac{149}{20}} = \frac{7}{6} \div \frac{149}{20} = \frac{7}{6} \times \frac{20}{149} = \frac{70}{447}$

د) $2 - \left(-\frac{1}{3} \div \frac{5}{3}\right) = 2 - \left(-\frac{1}{3} \times \frac{3}{5}\right) = 2 - \left(-\frac{1}{5}\right) = 2 + \frac{1}{5} = \frac{10}{5} + \frac{1}{5} = \frac{11}{5}$

الف) $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{3}}} = 1 + \frac{1}{1 + \frac{1}{\frac{4}{3}}} = 1 + \frac{1}{1 + \frac{3}{4}} = 1 + \frac{1}{\frac{7}{4}} = 1 + \frac{4}{7} = \frac{11}{7}$

ب) $3 - \frac{2 - 2\frac{1}{3}}{-3 + 1\frac{2}{3}} = 3 - \frac{2 - \frac{4}{3}}{-3 + \frac{5}{3}} = 3 - \frac{\frac{2}{3}}{-\frac{4}{3}} = 3 - \left(-\frac{1}{2}\right) = 3 + \frac{1}{2} = \frac{7}{2}$

$$= 3 - \left(\frac{1}{3} \div \frac{4}{3}\right) = 3 - \left(\frac{1}{3} \times \frac{3}{4}\right) = 3 - \frac{1}{4} = \frac{12}{4} - \frac{1}{4} = \frac{11}{4}$$

- 6

الف) $-(-16) \xrightarrow{\text{قرینه}} -(-(-16)) = -16$

ب) $-(-(-(+71))) \xrightarrow{\text{قرینه}} -(-(-(-(+71)))) = +71$

پ) $0 \xrightarrow{\text{قرینه}} 0$

ت) $+(-(-20)) \xrightarrow{\text{قرینه}} -(+(-(-20))) = -20$

ث) $\underbrace{-(-(-\dots(-1396)\dots))}_{2017} = -1396$

ی) $\underbrace{-(+(-(+(-\dots(+1438)\dots)))}_{2016} = +1438$

- 7

الف) $\frac{72 \times (-16) \times (-17) \times 16}{-85 \times 96 \times (-56)} \Rightarrow + \frac{\cancel{72}^3 \times \cancel{16}^1 \times \cancel{17}^1 \times \cancel{16}^1}{\cancel{85}^5 \times \cancel{96}^4 \times \cancel{56}^{14}} = \frac{3 \times \cancel{16}^1 \times 1 \times \cancel{16}^1}{5 \times \cancel{16}^1 \times \cancel{16}^7} = \frac{24}{35}$

ب) $\frac{(-74) \times (+84)}{28 \times (-37)} \Rightarrow \frac{\cancel{74}^2 \times \cancel{84}^3}{\cancel{28}^1 \times \cancel{37}^1} = 6$

ج) $\frac{(-88) \times (+60) \times 42}{-49 \times 66 \times (-16)} \Rightarrow \frac{\cancel{88}^{11} \times \cancel{60}^6 \times \cancel{42}^6}{\cancel{49}^7 \times \cancel{66}^2 \times \cancel{16}^2} = \frac{\cancel{11}^1 \times \cancel{6}^3 \times \cancel{6}^1}{7 \times \cancel{6}^2 \times \cancel{2}^1} = \frac{3 \times \cancel{6}^1}{7 \times \cancel{2}^1} = \frac{3}{7}$

د) $\frac{(-48) \times (+48) \times (-48)}{-(+24) \times (-36) \times (-24)} \Rightarrow + \frac{\cancel{48}^3 \times \cancel{48}^3 \times \cancel{48}^3}{\cancel{24}^1 \times \cancel{36}^{18} \times \cancel{24}^1} = \frac{2 \times \cancel{24}^2 \times 2}{1 \times \cancel{24}^9 \times 1} = \frac{2 \times \cancel{24}^4 \times 2}{\cancel{24}^3} = \frac{16}{3}$

- 8

$$4 - \frac{-3^2 - 2^2}{3 - 4} \div \frac{2^4 - 3^2}{4 - 6} = 4 - \frac{-9 - 4}{-1} \div \frac{16 - 9}{-2} = 4 - \frac{-17}{-1} \div \frac{7}{-2} = 4 - 17 \div \left(\frac{-7}{2}\right)$$

$$= 4 - 17 \times \frac{-2}{7} = 4 + \frac{34}{7} = \frac{28 + 34}{7} = \frac{62}{7}$$

- 9

الف) $-[2^3 \times 3] + [-2^2 \times 3 + 4^2] = -[24] + [-12 + 16] = -24 + 4 = -20$

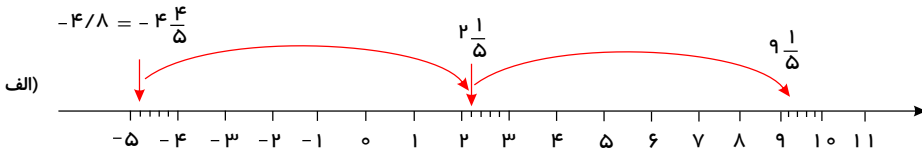
ب) $-11^2 - 5 \times 4^2 + 3 \times (4^2 - 1) = -121 - 80 + 3 \times (16 - 1) = -201 + 45 = -156$

ج) $\sqrt{16} - 2[5 - 4 \times 3 - 11] = 2 - 2 \times [5 - 12 - 11] = 2 - 2 \times [-18] = 2 + 36 = 38$

د) $8 - 5 \left[5 + 2(16 - \sqrt{64} \times \sqrt{\frac{-24}{-6}} + 19) \right] = 8 - 5[5 + 2(16 - 16 + 19)]$

$8 - 5[5 + 38] = 8 - 5 \times 43 = -207$

ه) $\frac{24 - 14 \times 2 + 30}{18 - (15 - 2 \times 5)} = \frac{24 - 28 + 30}{18 - (15 - 10)} = \frac{-4 + 30}{18 - 5} = \frac{26}{13} = +2$



قرینه نسبت به b $\Rightarrow a \longrightarrow 2 \times b - a$

قرینه نسبت به -1

$+3 \longrightarrow 2 \times (-1) - 3 = -2 - 3 = -5$

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