



## درس چهارم: ضرب و تقسیم عددهای گویا



(ت) درست

(پ) درست

(پ) نادرست

(الف) نادرست



(پ) معکوس

(پ) ۱

(الف) صفر - صفر



(الف) گزینه (۲)

(پ) گزینه (۱)

(پ) گزینه (۱)



۱

$$-\frac{1}{2} = -\frac{12}{10} = -\frac{6}{5} \xrightarrow{\text{معکوس}} -\frac{5}{6}$$

$$\frac{1}{5} = \frac{8}{8} \xrightarrow{\text{معکوس}} \frac{5}{8} \Rightarrow 1 \frac{3}{5} \times \frac{5}{8} = 1$$

$$\frac{-2}{3} \div \frac{3}{-4} = \left(-\frac{2}{3}\right) \div \left(-\frac{3}{4}\right) = \frac{2}{3} \div \frac{3}{4} = \frac{2}{3} \times \frac{4}{3}$$

$$\text{۱} \quad \frac{7}{8} \times \left(+\frac{12}{5}\right) = -\left(\frac{7}{8} \times \frac{12}{5}\right) = -\frac{21}{10}$$

$$\text{۲} \quad -\frac{5}{12} \times \left(-\frac{6}{7}\right) = \frac{5}{12} \times \frac{6}{7} = \frac{5}{14}$$

$$\text{الف) } \frac{2}{5} \times \left(+\frac{5}{8}\right) = \frac{2}{5} \times \frac{5}{8} = \frac{1}{4}$$

$$\text{پ) } \frac{9}{2} \times \left(-\frac{1}{3}\right) = -\left(\frac{9}{2} \times \frac{1}{3}\right) = -\frac{9}{2}$$

$$\text{الف) } -\frac{2}{3} \times \left(+\frac{6}{5}\right) = -\left(\frac{2}{3} \times \frac{6}{5}\right) = -\left(\frac{11}{15} \times \frac{2}{5}\right) = -\frac{22}{5}$$

$$\text{پ) } \frac{2}{7} \times \left(-\frac{4}{5}\right) = -\left(\frac{2}{7} \times \frac{4}{5}\right) = -\left(\frac{2}{1} \times \frac{4}{5}\right) = -\frac{4}{5}$$

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$$\text{ا) } -1\frac{3}{5} \times (-\frac{1}{2}) = 1\frac{3}{5} \times \frac{1}{2} = \frac{8}{5} \times \frac{1}{2} = \frac{2}{5}$$

$$\text{ب) } 1\frac{1}{5} \times (+2\frac{4}{3}) = 1\frac{1}{5} \times 2\frac{4}{3} = \frac{6}{5} \times \frac{10}{3} = 4$$

$$\text{ج) } -1\frac{1}{8} \times (+2\frac{2}{5}) = -(1\frac{1}{8} \times 2\frac{2}{5}) = -(\frac{7}{8} \times \frac{12}{5}) = -\frac{9}{2}$$

$$\text{د) } 2\frac{1}{2} \times (-2\frac{1}{4}) = -(2\frac{1}{2} \times 2\frac{1}{4}) = -(\frac{5}{2} \times \frac{9}{4}) = -18$$

$$A = -2\frac{1}{2} = -\frac{5}{2}, \quad B = -1\frac{3}{4} = -\frac{7}{4} \Rightarrow A \times B = (-\frac{5}{2}) \times (-\frac{7}{4}) = \frac{5}{2} \times \frac{7}{4} = \frac{35}{8}$$

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**الف**  $\frac{4}{3}$

**ب)**  $-\frac{7}{3}$

**ج)**  $\frac{1}{5}$

**د)**  $-\frac{1}{4}$

$$\text{ا) } +2\frac{3}{5} = 1\frac{3}{5} \xrightarrow{\text{معکوس}} \frac{5}{13}$$

$$\text{ب) } -1\frac{3}{4} = -\frac{7}{4} \xrightarrow{\text{معکوس}} -\frac{4}{7}$$

$$\text{ج) } 1\frac{1}{4} = 1\frac{4}{5} = \frac{7}{5} \xrightarrow{\text{معکوس}} \frac{5}{7}$$

$$\text{د) } -3\frac{1}{4} = -\frac{13}{4} = -\frac{17}{5} \xrightarrow{\text{معکوس}} -\frac{5}{17}$$

٥

**الف**  $-\frac{7}{2}$

**ب)**  $-\frac{9}{25}$

**ج)**  $\frac{5}{17}$

**د)**  $-\frac{1}{5}$

**ه) ١٠٠**

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$$\begin{aligned} (\frac{1}{2}-1)(\frac{1}{3}-1)(\frac{1}{4}-1)(\frac{1}{5}-1)(\frac{1}{6}-1) &= (\frac{1-2}{2})(\frac{1-3}{3})(\frac{1-4}{4})(\frac{1-5}{5})(\frac{1-6}{6}) \\ &= (-\frac{1}{2})(-\frac{2}{3})(-\frac{3}{4})(-\frac{4}{5})(-\frac{5}{6}) \\ &= -\frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \times \frac{5}{6} = -\frac{1}{6} \end{aligned}$$

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$$\text{ا) } \frac{14}{15} \div (-\frac{7}{5}) = \frac{14}{15} \times (-\frac{5}{7}) = -\frac{14}{15} \times \frac{5}{7} = -\frac{2}{3}$$

$$\text{ب) } -\frac{2}{3} \div (-\frac{3}{2}) = -\frac{2}{3} \times (-\frac{2}{3}) = \frac{2}{3} \times \frac{2}{3} = \frac{4}{9}$$

$$\text{ج) } -\frac{9}{10} \div \frac{6}{25} = -\frac{9}{10} \times \frac{25}{6} = -\frac{15}{4}$$

$$\text{د) } \frac{99}{100} \div (-\frac{99}{100}) = \frac{99}{100} \times (-\frac{100}{99}) = -\frac{99}{100} \times \frac{100}{99} = -1$$

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$$\text{ا) } -\frac{12}{5} \div (-12) = -\frac{12}{5} \times (-\frac{1}{12}) = \frac{12}{5} \times \frac{1}{12} = \frac{1}{5}$$

$$\text{ب) } 3 \div (-\frac{6}{5}) = 3 \times (-\frac{5}{6}) = -3 \times \frac{5}{6} = -\frac{5}{2}$$

$$\text{ج) } 1\frac{1}{2} \div (-3) = 1\frac{1}{2} \times (-\frac{1}{3}) = -\frac{3}{2} \times \frac{1}{3} = -\frac{1}{2}$$

$$\text{د) } -3\frac{1}{2} \div 6 = -3\frac{1}{2} \times \frac{1}{6} = -\frac{7}{2} \times \frac{1}{6} = -\frac{7}{12}$$



$$\text{۱) } -1/\cancel{4} \div \frac{\cancel{4}}{3} = -1/\cancel{4} \times \frac{3}{\cancel{4}} = -\frac{\cancel{4}^1}{\cancel{4}^1} \times \frac{3}{\cancel{4}^1} = -\frac{3}{4}$$

$$\text{۲) } -1/\cancel{8} \div (-\frac{\cancel{2}}{3}) = -1/\cancel{8} \times (-\frac{3}{\cancel{2}}) = 1/\cancel{8} \times \frac{3}{\cancel{2}} = \frac{\cancel{8}^1}{\cancel{8}^1} \times \frac{3}{\cancel{2}} = \frac{3}{2}$$

$$\text{۳) } 2/\cancel{7} \div 2/\cancel{4} = \frac{2\cancel{7}}{10} \div \frac{2\cancel{4}}{10} = \frac{\cancel{2}\cancel{7}^1}{\cancel{2}\cancel{4}^1} \times \frac{\cancel{4}^1}{\cancel{7}^1} = \frac{9}{1}$$

$$\text{۴) } -3/\cancel{6} \div (-4/\cancel{8}) = -\frac{3\cancel{6}}{10} \div (-\frac{4\cancel{8}}{10}) = -\frac{3\cancel{6}}{10} \times (-\frac{10}{4\cancel{8}}) = \frac{\cancel{3}\cancel{6}^1}{\cancel{3}\cancel{8}^1} \times \frac{\cancel{10}^1}{\cancel{4}\cancel{8}^1} = \frac{3}{4}$$

۹

$$\text{۵) } \frac{1}{5} = \frac{1}{10} = 0/10$$

$$\text{۶) } \frac{24}{25} = \frac{96}{100} = 0/96$$

$$\text{۷) } \frac{7}{2} = \frac{35}{10} = 3/5$$

$$\text{۸) } -\frac{5}{8} = -\frac{625}{1000} = -0/625$$

۱۰

$$\text{۹) } (-\frac{2}{\cancel{4}} - (-\frac{1}{\cancel{4}})) \times \frac{\cancel{4}}{10} = (-\frac{2}{\cancel{4}} + \frac{1}{\cancel{4}}) \times \frac{\cancel{4}}{10} = \frac{\cancel{2}^1}{\cancel{4}} \times \frac{\cancel{4}}{\cancel{4}^1} = \frac{1}{5}$$

$$\text{۱۰) } -\frac{4}{3} \div (-\frac{1}{3} + \frac{3}{5}) = -\frac{4}{3} \div (-\frac{5}{15} + \frac{9}{15}) = -\frac{4}{3} \div \frac{4}{15} = -\frac{\cancel{4}}{\cancel{3}} \times \frac{\cancel{15}^3}{\cancel{4}} = -5$$

$$\text{۱۱) } (-\frac{1}{9} - \frac{2}{9} - \frac{-3}{9} - \frac{4}{9}) \times (-\frac{5}{\cancel{5}}) = (\frac{-1-2-(-3)-4}{9}) \times (-\frac{5}{\cancel{5}}) = -\frac{4}{9} \times (-\frac{5}{\cancel{5}}) = \frac{4}{9} \times \frac{\cancel{5}^1}{\cancel{5}} = \frac{2}{9}$$

$$\text{۱۲) } (\frac{1}{\cancel{5}} - \frac{-3}{\cancel{4}} + \frac{5}{\cancel{9}}) \div \frac{35}{36} = (\frac{-6}{36} - \frac{27}{36} + \frac{20}{36}) \div \frac{35}{36} = -\frac{1}{36} \div \frac{35}{36} = -\frac{1}{36} \times \frac{36}{35} = -\frac{1}{35}$$

$$\text{۱۳) } (-\frac{1}{2} - \frac{1}{9}) + (-3 + 5) - 1\frac{7}{18} = (-\frac{9}{18} - \frac{2}{18}) + 2 - \frac{25}{18} = -\frac{11}{18} + \frac{36}{18} - \frac{25}{18} = 0$$

$$\text{۱۴) } -2\frac{3}{\cancel{4}} \times (-1\frac{1}{\cancel{5}}) \div (\frac{3}{\cancel{2}} - 1) = -\frac{11}{\cancel{4}} \times (-\frac{6}{\cancel{5}}) \div (\frac{3}{\cancel{2}} - \frac{2}{\cancel{2}}) = -\frac{11}{\cancel{4}} \times (-\frac{6}{\cancel{5}}) \div (-\frac{1}{\cancel{2}}) = -\frac{11}{\cancel{4}} \times \frac{6}{\cancel{5}} \times \frac{\cancel{2}^1}{\cancel{1}} = -\frac{99}{14}$$

$$\text{۱۵) } -2\frac{1}{3} \div 1\frac{2}{5} - 2\frac{1}{6} \times 1\frac{1}{4} = -\frac{7}{3} \div \frac{7}{5} - \frac{13}{6} \times \frac{5}{4} = -\frac{5}{3} - \frac{65}{24} = -\frac{40}{24} - \frac{65}{24} = -\frac{105}{24} = -\frac{35}{8}$$

$$\text{۱۶) } (1 - 1\frac{1}{2})(2 - 2\frac{1}{2})(3 - 3\frac{1}{2}) = (-\frac{1}{2})(-\frac{1}{2})(-\frac{1}{2}) = -\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = -\frac{1}{8}$$

۱۱

$$\begin{aligned} (3 + (2 - \frac{1}{2}) \div (1 - \frac{1}{2})) \times (\frac{1}{2} - 2) &= (3 + (\frac{2}{2} - \frac{1}{2}) \div (\frac{1}{2} - \frac{1}{2})) \times (\frac{1}{2} - \frac{1}{2}) = (3 + \frac{1}{2} \div \frac{1}{2}) \times (-\frac{1}{2}) = (3 + \frac{1}{2} \times 1) \times (-\frac{1}{2}) \\ &= (3 + 1) \times (-\frac{1}{2}) = -\frac{4}{2} \times \frac{1}{2} = -2 \end{aligned}$$

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$$\text{۱۷) } \frac{-1\frac{2}{3} + \frac{2}{6}}{-2\frac{1}{3} - \frac{1}{9}} = \frac{-\frac{5}{3} + \frac{1}{2}}{-\frac{7}{3} - \frac{1}{9}} = \frac{-\frac{5}{3} + \frac{1}{2}}{-\frac{21}{9} - \frac{1}{9}} = \frac{-\frac{5}{3} + \frac{1}{2}}{-\frac{28}{9}} = \frac{\cancel{2}\cancel{5}^1 \times \cancel{3}^1}{\cancel{2}\cancel{7}^1 \times \cancel{2}\cancel{4}^1} = \frac{5}{7}$$

$$\text{۱۸) } \frac{-1\frac{3}{4} \times 1\frac{1}{2} + 2}{4\frac{1}{2} \div (-\frac{3}{5})} = \frac{-\frac{7}{4} \times \frac{3}{2} + 2}{\frac{9}{2} \div (-\frac{3}{5})} = \frac{-\frac{21}{8} + 2}{-\frac{9}{2} \times \frac{5}{3}} = \frac{-\frac{15}{8} + 2}{-\frac{15}{2}} = \frac{-\frac{1}{8} + 2}{-\frac{15}{2}} = \frac{\frac{15}{8}}{\frac{15}{2}} = \frac{1}{2}$$

$$\text{ا) } \frac{-\frac{1}{2} - (-\frac{1}{3})}{\frac{1}{2} \times \frac{1}{3} - \frac{5}{6} \div \frac{2}{3}} = \frac{-\frac{1}{2} + \frac{1}{3}}{\frac{1}{2} \times \frac{1}{3} - \frac{5}{6} \times \frac{2}{3}} = \frac{-\frac{1}{2} + \frac{1}{3}}{\frac{1}{2} - \frac{5}{6}} = \frac{-\frac{1}{2} + \frac{1}{3}}{\frac{1}{6}} = \frac{-\frac{1}{2} + \frac{1}{3}}{\frac{1}{6}} = \frac{1}{6} = \frac{1 \times \cancel{1}}{\cancel{6} \times 2} = \frac{1}{12}$$

$$\text{ب) } \frac{\left(\frac{2}{3} - \frac{7}{2}\right) - \left(\frac{3}{2} - \frac{5}{3}\right)}{\left(\frac{2}{3} - \frac{3}{12}\right) - \left(\frac{1}{3} - \frac{1}{2}\right)} = \frac{\left(\frac{4}{2} - \frac{7}{2}\right) - \left(\frac{9}{6} - \frac{10}{6}\right)}{\left(\frac{2}{3} - \frac{3}{12}\right) - \left(\frac{1}{3} - \frac{1}{2}\right)} = \frac{-\frac{3}{2} - \left(-\frac{1}{6}\right)}{\frac{1}{12} - \frac{5}{12}} = \frac{-\frac{3}{2} + \frac{1}{6}}{-\frac{4}{12}} = \frac{-\frac{9}{6} + \frac{1}{6}}{-\frac{4}{12}} = \frac{-\frac{8}{6}}{-\frac{4}{12}} = \frac{-\frac{4}{3}}{-\frac{1}{3}} = -\frac{4 \times \cancel{1}}{\cancel{3} \times 5} = -\frac{4}{5}$$

$$\text{ج) } \frac{2}{1 + \frac{1}{1 - \frac{4}{3}}} = \frac{2}{1 + \frac{1}{\frac{3-4}{3}}} = \frac{2}{1 + \frac{1}{-\frac{1}{3}}} = \frac{2}{1 + (-3)} = \frac{2}{1-3} = \frac{2}{-2} = -1$$

$$\text{د) } -\frac{2}{3} \div ((1 - \frac{1}{3}) - (-\frac{3}{9}) \times (\frac{1}{6})) = -\frac{2}{3} \div ((\frac{2}{3} - \frac{1}{3}) - (-\frac{1}{3}) \times \frac{1}{6}) = -\frac{2}{3} \div (\frac{2}{3} - \frac{1}{3} \times \frac{1}{6}) = -\frac{2}{3} \div (\frac{2}{3} + \frac{1}{18}) \\ = -\frac{2}{3} \div (\frac{12}{18} + \frac{1}{18}) = -\frac{2}{3} \div \frac{13}{18} = -\frac{2}{3} \times \frac{\cancel{18}}{\cancel{13}} = -\frac{12}{13}$$

$$\text{هـ) } \frac{1 + \frac{2}{5}}{1 - \frac{2}{5}} \div \left(1 - \frac{1}{1 - \frac{1}{2}}\right) = \frac{\frac{5+2}{5}}{\frac{5-2}{5}} \div \left(1 - \frac{1}{\frac{1-1}{2}}\right) = \frac{\frac{7}{5}}{\frac{3}{5}} \div \left(1 - \frac{1}{1}\right) = \frac{7 \times \cancel{5}}{\cancel{5} \times 3} \div (1-1) = \frac{7}{3} \div (-1) = -\frac{7}{3}$$

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$$a = \frac{1}{6}, \quad b = -\frac{1}{3} \Rightarrow \left(\frac{1}{a} + \frac{1}{b}\right) \div \frac{b}{a} = \left(\frac{1}{\frac{1}{6}} + \frac{1}{-\frac{1}{3}}\right) \div \frac{-\frac{1}{3}}{\frac{1}{6}} = (6 - 3) \div \frac{-\frac{1}{3}}{-\frac{1}{3}} = 3 \div (-2) = -\frac{3}{2}$$

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$$\text{الف) } \left(-\frac{3}{2}\right)^2 + \left(-\frac{1}{2}\right)\left(-\frac{1}{3}\right)^2 = \left(-\frac{3}{2}\right)\left(-\frac{3}{2}\right) + \left(-\frac{1}{2}\right)\left(-\frac{1}{3}\right)\left(-\frac{1}{3}\right)\left(-\frac{1}{3}\right) = \frac{3}{2} \times \frac{3}{2} + \frac{1}{2} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \\ = \frac{9}{4} + \frac{1}{54} = \frac{243}{108} + \frac{2}{108} = \frac{245}{108}$$

$$\text{د) } \left(-2 \frac{1}{3}\right)^2 \div \left(-\frac{1}{4}\right)^2 = \left(-\frac{7}{3}\right)^2 \div \left(-\frac{1}{4}\right)^2 = \left(\left(-\frac{7}{3}\right)\left(-\frac{7}{3}\right)\right) \div \left(\left(-\frac{1}{4}\right)\left(-\frac{1}{4}\right)\right) \\ = \left(\frac{49}{9} \times \frac{49}{9}\right) \div \left(\frac{1}{16} \times \frac{1}{16}\right) = \frac{49}{9} \div \frac{1}{16} = \frac{49}{9} \times 16 = \frac{784}{9}$$

$$\text{ز) } \frac{1 + \left(-\frac{3}{4}\right)^2 \div \left(-\frac{9}{8}\right)}{\left(-\frac{3}{2}\right)^3} = \frac{1 + \left(\left(-\frac{3}{4}\right)\left(-\frac{3}{4}\right)\right) \div \left(-\frac{9}{8}\right)}{\left(-\frac{3}{2}\right)\left(-\frac{3}{2}\right)\left(-\frac{3}{2}\right)} = \frac{1 + \left(\frac{9}{16} \times \frac{3}{4}\right) \div \left(-\frac{9}{8}\right)}{-\frac{3}{2} \times \frac{3}{2} \times \frac{3}{2}} = \frac{1 + \frac{9}{16} \times \left(-\frac{8}{9}\right)}{-\frac{27}{8}} = \frac{1 - \frac{9}{16} \times \frac{8}{9}}{-\frac{27}{8}} \\ = \frac{1 - \frac{1}{2}}{-\frac{27}{8}} = -\frac{\frac{1}{2}}{\frac{27}{8}} = -\frac{1 \times \cancel{4}}{\cancel{2} \times 27} = -\frac{4}{27}$$



$$\begin{aligned} ((-\frac{13}{15}) \div (-\frac{19}{15}))^3 &= ((\frac{15}{15} - \frac{13}{15}) \div (\frac{15}{15} - \frac{19}{15}))^3 = (\frac{2}{15} \div (-\frac{4}{15}))^3 = (\frac{2}{15} \times (-\frac{15}{4}))^3 = (-\frac{2}{15} \times \frac{15}{4})^3 \\ &= (-\frac{1}{2})^3 = (-\frac{1}{2})(-\frac{1}{2})(-\frac{1}{2}) = -\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = -\frac{1}{8} \end{aligned}$$

(۱۵)

$$(-\frac{2}{3})^m = -\frac{1}{27} \Rightarrow m = 3 \quad (-\frac{4}{5})^n = \frac{16}{25} \Rightarrow n = 2 \quad n - m = 2 - 3 = -1$$

(۱۶)

$$\begin{aligned} \frac{2}{3} - \frac{3}{4} + \frac{2}{3} - \frac{3}{4} + \dots + \frac{2}{3} &= 14 \times (\frac{2}{3} - \frac{3}{4}) + \frac{2}{3} = 14 \times (\frac{8}{12} - \frac{9}{12}) + \frac{2}{3} = 14 \times (-\frac{1}{12}) + \frac{2}{3} \\ &= -\frac{14}{12} + \frac{2}{3} = -\frac{7}{6} + \frac{2}{3} = -\frac{7}{6} + \frac{4}{6} = -\frac{3}{6} = -\frac{1}{2} \end{aligned}$$

$$\frac{2}{3} - \frac{3}{4} + \frac{2}{3} - \frac{3}{4} + \dots + \frac{2}{3} = 15 \times \frac{2}{3} + 14 \times (-\frac{3}{4}) = 10 \times \frac{2}{3} - 14 \times \frac{3}{4} = 10 - \frac{21}{2} = \frac{20}{2} - \frac{21}{2} = -\frac{1}{2}$$

### تمرین های ویژه

$$A = \frac{1}{99} \times 1 \frac{1}{97} \times 1 \frac{1}{95} \times \dots \times 1 \frac{1}{3} \times 1 \frac{1}{1} = \frac{100}{99} \times \frac{98}{97} \times \frac{96}{95} \times \dots \times \frac{4}{3} \times \frac{2}{1}$$

(۱)

$$A \div B = A \times \frac{1}{B} = \left( \frac{100}{99} \times \frac{98}{97} \times \frac{96}{95} \times \dots \times \frac{4}{3} \times \frac{2}{1} \right) \times \left( \frac{2}{1} \times \frac{4}{3} \times \frac{6}{5} \times \dots \times \frac{96}{95} \times \frac{98}{97} \right) = 100$$

(۲)

$$\begin{aligned} 1 - \frac{1}{2 - \frac{1}{3 - \frac{1}{4 - \frac{1}{5}}}} &= 1 - \frac{1}{2 - \frac{1}{3 - \frac{1}{5}}} = 1 - \frac{1}{2 - \frac{1}{3 - \frac{1}{5}}} = 1 - \frac{1}{2 - \frac{1}{3 - \frac{5}{19}}} = 1 - \frac{1}{2 - \frac{1}{19 - \frac{5}{19}}} = 1 - \frac{1}{2 - \frac{1}{14}} \\ &= 1 - \frac{1}{2 - \frac{1}{19 - \frac{19}{52}}} = 1 - \frac{1}{2 - \frac{1}{52}} = 1 - \frac{1}{51} = 1 - \frac{52}{52} = \frac{80}{52} - \frac{52}{52} = \frac{28}{52} \end{aligned}$$

(۳)

$$\frac{7}{3} + 5 \times \left( -\frac{8}{3} \right) = \frac{7}{3} - 5 \times \frac{8}{3} = \frac{7}{3} - \frac{40}{3} = -\frac{33}{3} = -11$$

فاصله خانه قورباغه تا برکه

(۴)

شماره پرسش	۱	۲	۳	۴	۵
مسیر طی شده در پرسش	$\frac{1}{3}x$	$\frac{1}{3} \times \frac{2}{3}x = \frac{2}{9}x$	$\frac{1}{3} \times \frac{4}{9}x = \frac{4}{27}x$	$\frac{1}{3} \times \frac{8}{27}x = \frac{8}{81}x$	$\frac{1}{3} \times \frac{16}{81}x = \frac{16}{243}x$
مسیر باقیمانده پس از پرسش	$\frac{2}{3}x$	$x - (\frac{1}{3}x + \frac{2}{9}x) = \frac{4}{9}x$	$x - (\frac{5}{9}x + \frac{4}{27}x) = \frac{1}{27}x$	$x - (\frac{19}{27}x + \frac{8}{81}x) = \frac{16}{27}x$	$x - (\frac{65}{27}x + \frac{16}{243}x) = \frac{32}{243}x$

$$\frac{32}{243}x = 183 \Rightarrow x = \frac{183 \times 243}{32} = \frac{44469}{32} \approx 1390$$

(۱۶)

۵

$$-\frac{1}{4} - \frac{1}{5} = -\frac{5}{20} - \frac{4}{20} = -\frac{9}{20} \Rightarrow \boxed{\square} = \frac{20}{9}$$

۶

$$-\frac{1}{9} - \frac{1}{3} = -\frac{1}{9} - \frac{3}{9} = -\frac{4}{9} \Rightarrow \boxed{\square} = 9$$

پرسش‌های چهارگزینه‌ای

۱ گزینه (۳)

۲ گزینه (۴)

۳ گزینه (۱)

۱)  $-\frac{17}{4} = -4/25 \checkmark$       ۲)  $-\frac{19}{4} = -4/75 \checkmark$       ۳)  $-4\frac{1}{3} = -4/3 \checkmark$       ۴)  $-4\frac{4}{3} = -5/3 \times$

۱)  $-\frac{7}{2} = -\frac{-21}{60}$       ۲)  $-\frac{11}{3} = -\frac{-22}{60}$       ۳)  $-\frac{19}{5} = -\frac{-228}{60}$       ۴)  $-\frac{15}{4} = -\frac{-220}{60}$

۴ گزینه (۴)

$$-\frac{3}{7} \frac{2}{7} = -\frac{23}{7} \xrightarrow{\text{معکوس}} \frac{7}{23} \xrightarrow{\text{قرینه}} \frac{7}{23}$$

۵ گزینه (۲)

۱)  $\frac{3}{5} - \frac{5}{7} = \frac{21}{35} - \frac{25}{35} = -\frac{4}{35} \times$       ۲)  $-\frac{2}{9} - \left(-\frac{3}{8}\right) = -\frac{16}{72} + \frac{27}{72} = \frac{11}{72} \checkmark$

۳)  $\frac{8}{11} - \frac{7}{9} = \frac{72}{99} - \frac{77}{99} = -\frac{5}{99} \times$       ۴)  $-\frac{11}{3} + \frac{7}{2} = -\frac{22}{6} + \frac{21}{6} = -\frac{1}{6} \times$

۶ گزینه (۱)

$$-\frac{2}{3} \times \frac{6}{5} - \frac{4}{5} \times \frac{-2}{7} = -\frac{2}{3} \times \cancel{\frac{6}{5}} + \frac{4}{5} \times \frac{2}{7} = -\frac{4}{5} + \frac{8}{35} = -\frac{28}{35} + \frac{8}{35} = -\frac{20}{35} = -\frac{4}{7}$$

۷ گزینه (۲)

$$\frac{-7}{15} \div \frac{14}{5} - 1 = -\frac{7}{15} \times \cancel{\frac{5}{14}} - 1 = -\frac{1}{6} - 1 = -\frac{1}{6} - \frac{6}{6} = -\frac{7}{6}$$

۸ گزینه (۴)

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

$$= 1 - \frac{2}{\frac{1}{3}} = 1 - 2 \div \frac{1}{3} = 1 - 2 \times 3 = 1 - 6 = -5$$

۹ گزینه (۳)

$$-\frac{37}{4} = -9/25$$

۱۰ گزینه (۱)

$$-\frac{1}{4} \div \frac{-7}{12} = -\frac{1}{4} \div \frac{-7}{12} = \frac{1}{4} \times \cancel{\frac{12}{7}} = \frac{3}{7}$$