1.

$$\frac{\frac{5}{2}}{3}-\frac{5}{2}=5\cdot\frac{3}{2}-\frac{5}{2}\cdot\frac{1}{3}$$

$$=\underset{(3)}{\frac{15}{2}}-\underset{(1)}{\frac{5}{6}}$$

$$=\frac{45-5}{6}=\frac{\cancel{40}}{\cancel{6}}$$

$$=\frac{20}{3}$$

CEVAP: D

2.

$$\frac{\frac{2}{5}}{4}+\frac{\frac{2}{5}}{4}+\frac{1}{10}=\frac{2}{5}\cdot\frac{1}{4}+2\cdot\frac{4}{5}+\frac{1}{10}$$

$$=\frac{\cancel{2}}{\cancel{20}}+\frac{8}{5}+\frac{1}{10}=\frac{1}{10}+\frac{8}{5}+\frac{1}{10}$$

$$=\underset{(2)}{\frac{2}{10}+\frac{8}{5}}=\frac{2+16}{10}=\frac{\cancel{18}}{\cancel{10}}=\frac{9}{5}=1\frac{4}{5}$$

CEVAP: D

3.

$$1-\frac{1}{2}:\left(\underset{(2)}{\frac{4}{1}}-\frac{1}{2}\right)=1-\frac{1}{2}:\left(\frac{8-1}{2}\right)$$

$$=1-\frac{1}{2}:\left(\frac{7}{2}\right)=1-\frac{1}{\cancel{2}}\cdot\frac{\cancel{2}}{7}$$

$$=1-\frac{1}{7}=\frac{7-1}{7}=\frac{6}{7}$$

CEVAP: D

4.

$$1-\frac{\overset{1-\frac{1}{2}}{\overrightarrow{}}}{2-\underset{1-\frac{1}{3}}{\overleftarrow{\frac{1}{}}}}=1-\frac{\frac{1}{2}}{2-\frac{1}{\frac{2}{3}}}$$

$$=1-\frac{\overset{2-\frac{3}{2}}{\overrightarrow{\frac{1}{2}}}}{\underset{}{\overleftarrow{}}}=1-\frac{\frac{\cancel{1}}{\cancel{2}}}{\frac{\cancel{1}}{\cancel{2}}}$$

$$=1-1=0$$

CEVAP: C

5.

$$\frac{1}{2}-\frac{3}{2}\cdot\frac{\overset{1+\frac{3}{2}}{\overrightarrow{}}}{\underset{1-\frac{1}{2}}{\overleftarrow{}}}=\frac{1}{2}-\frac{3}{2}\cdot\frac{5}{\frac{2}{1}}$$

$$=\frac{1}{2}-\frac{3}{\cancel{2}}\cdot\frac{5}{\cancel{2}}\cdot\frac{\cancel{2}}{1}$$

$$=\frac{1}{2}-\frac{3}{2}\cdot 5$$

$$=\frac{1}{2}-\frac{15}{2}$$

$$=\frac{1-15}{2}=\frac{-14}{2}$$

$$=-7$$

CEVAP: D

6.

$$\left(1-\frac{1}{7}\right)\cdot\left(1-\frac{2}{7}\right)\cdot\left(1-\frac{3}{7}\right).....\left(1-\frac{41}{7}\right)$$

$$=\left(\frac{7-1}{7}\right)\left(\frac{7-2}{7}\right).....\underbrace{\left(\frac{7-7}{7}\right)}_{\text{bu çarpan 0 dır.}}.....\left(\frac{7-41}{7}\right)$$

$$=\frac{6}{7}\cdot\frac{5}{7}.....0.....\frac{-34}{7}$$

$$=0 \text{ olacaktır.}$$

CEVAP: A

7.

$$\frac{3-\frac{2}{3}}{2-\frac{3}{2}}:\left(2-\frac{1}{2-\frac{1}{2}}\right)$$

$$=\frac{\frac{7}{3}}{\frac{1}{2}}:\left(2-\frac{1}{\frac{3}{2}}\right)$$

$$=\frac{\frac{7}{3}}{\frac{1}{2}}:\left(2-1\cdot\frac{2}{3}\right)=\frac{\frac{7}{3}}{\frac{1}{2}}:\left(2-\frac{2}{3}\right)$$

$$=\frac{\frac{7}{3}}{\frac{1}{2}}:\left(\frac{4}{3}\right)=\frac{7}{3}\cdot\frac{2}{1}:\left(\frac{4}{3}\right)$$

$$=\frac{14}{3}:\frac{4}{3}=\frac{14}{\cancel{3}}\cdot\frac{\cancel{3}}{4}=\frac{\cancel{14}}{\cancel{4}}=\frac{7}{2}$$

CEVAP: D

8.

$$\frac{6\frac{2}{3}}{\frac{5}{6}}=\frac{\frac{20}{3}}{\frac{5}{6}}$$

$$=\frac{20}{\cancel{3}}\cdot\frac{\overset{2}{\cancel{6}}}{5}=\frac{40}{5}=8 \text{ katıdır.}$$

CEVAP: D

9. $\left(1-\frac{1}{4}\right)\left(1-\frac{1}{9}\right)\left(1-\frac{1}{16}\right)....\left(1-\frac{1}{100}\right)$

İki kare fark olarak çarpanları yazalım.

$$=\left(1-\frac{1}{2^2}\right)\left(1-\frac{1}{3^2}\right)\cdot\left(1-\frac{1}{4^2}\right).....\left(1-\frac{1}{10^2}\right)$$

$$=\left(1-\frac{1}{2}\right)\left(1+\frac{1}{2}\right)\left(1-\frac{1}{3}\right)\left(1+\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\left(1+\frac{1}{4}\right)...\left(1-\frac{1}{10}\right)\left(1+\frac{1}{10}\right)$$

$$=\left(1-\frac{1}{2}\right)\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)...\left(1-\frac{1}{10}\right)\left(1+\frac{1}{2}\right)\left(1+\frac{1}{3}\right)\left(1+\frac{1}{4}\right)...\left(1+\frac{1}{10}\right)$$

$$=\left(\frac{\cancel{1}}{\cancel{2}}\cdot\frac{\cancel{2}}{\cancel{3}}\cdot\frac{\cancel{3}}{\cancel{4}}\cdot\cdots\cdot\frac{\square}{10}\right)\cdot\left(\frac{\cancel{3}}{\cancel{2}}\cdot\frac{\cancel{4}}{\cancel{3}}\cdot\frac{\square}{\cancel{4}}\cdot\cdots\cdot\frac{11}{10}\right)$$

$$=\left(\frac{1}{10}\right)\cdot\left(\frac{11}{2}\right)$$

$$=\frac{11}{20}$$

CEVAP: B

10. $\left(8\frac{5}{1907}+4\frac{3}{1907}\right)-\left(9\frac{13}{1907}-\frac{5}{1907}\right)$

$$=8+\frac{5}{1907}+4+\frac{3}{1907}-9-\frac{13}{1907}+\frac{5}{1907}$$

$$=8+4-9+\frac{5+3-13+5}{1907}$$

$$=3+\frac{13-13}{1907}$$

$$=3+\frac{0}{1907}$$

$$=3$$

CEVAP: B

11.

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

$$=\left(1-\frac{1}{8}\right)^{-1}\cdot\left(1+\frac{1}{27}\right)\cdot\left(1-\frac{1}{64}\right)$$

$$=\left(\frac{7}{8}\right)^{-1}\cdot\left(\frac{28}{27}\right)\cdot\left(\frac{63}{64}\right)$$

$$=\frac{\cancel{8}}{7}\cdot\frac{28}{\underset{3}{\cancel{27}}}\cdot\frac{\overset{7}{\cancel{63}}}{\underset{8}{\cancel{64}}}$$

$$=\frac{28\cdot\cancel{7}}{\cancel{7}\cdot 3\cdot 8}=\frac{\cancel{28}}{\cancel{24}}=\frac{7}{6}$$

CEVAP: A

12.

$$\left[-\left(-\frac{1}{3}\right)^{-1}\right]^2=\left[-\left(-\frac{3}{1}\right)^{1}\right]^2$$

$$=\left(-(-3)\right)^2=(3)^2=9$$

CEVAP: E

13.

$$\left(\frac{2}{3}\right)^3 \cdot \left(\frac{8}{3}\right)^{-2} = \frac{8}{27} \cdot \left(\frac{3}{8}\right)^2$$

$$= \frac{\overset{1}{\cancel{8}}}{\underset{3}{\cancel{27}}} \cdot \frac{\overset{1}{\cancel{9}}}{\underset{8}{\cancel{64}}} = \frac{1}{3 \cdot 8} = \frac{1}{24}$$

CEVAP: E

14.

$$\frac{1905\frac{4}{7} + 93\frac{10}{7}}{491\frac{5}{13} + 8\frac{8}{13}} = \frac{1905 + \frac{4}{7} + 93 + \frac{10}{7}}{491 + \frac{5}{13} + 8 + \frac{8}{13}}$$

$$= \frac{1905 + 93 + \frac{14}{7}}{491 + 8 + \frac{13}{13}} = \frac{1998 + 2}{499 + 1}$$

$$= \frac{2000}{500} = 4$$

CEVAP: B

15.

$$4 - \frac{2 + \frac{1 - \frac{3:5}{3}}{6}}{8}$$

$$= 4 - \frac{2 + \frac{1 - \frac{\frac{3}{5}}{3}}{6}}{8} = 4 - \frac{2 + \frac{1 - \frac{\cancel{3}}{5} \cdot \frac{1}{\cancel{3}}}{6}}{8}$$

$$= 4 - \frac{2 + \frac{1 - \frac{1}{5}}{6}}{8} = 4 - \frac{2 + \frac{\frac{4}{5}}{6}}{8}$$

$$= 4 - \frac{2 + \frac{\overset{2}{\cancel{4}}}{5} \cdot \frac{1}{\underset{3}{\cancel{6}}}}{8} = 4 - \frac{2 + \frac{2}{15}}{8}$$

$$= 4 - \frac{\frac{32}{15}}{8} = 4 - \frac{\overset{4}{\cancel{32}}}{15} \cdot \frac{1}{\cancel{8}} = 4 - \frac{4}{15} = \frac{56}{15}$$

CEVAP: E

16.

$$\frac{3\frac{1}{2} + \frac{1}{2} : \frac{3}{2}}{\left(\frac{3}{2}\right)^2} = \frac{\frac{7}{2} + \frac{1}{\cancel{2}} \cdot \frac{\cancel{2}}{3}}{\frac{9}{4}}$$

$$= \frac{\frac{7}{2} + \frac{1}{3}}{\frac{9}{4}} = \frac{\frac{21 + 2}{6}}{\frac{9}{4}}$$

$$= \frac{\frac{23}{6}}{\frac{9}{4}} = \frac{23}{\underset{3}{\cancel{6}}} \cdot \frac{\overset{2}{\cancel{4}}}{9} = \frac{23 \cdot 2}{3 \cdot 9} = \frac{46}{27}$$

CEVAP: E

17.

$$\frac{4}{5}:\left[\frac{8}{5}:\left(2+\frac{2}{3}\right)-\frac{1}{5}\cdot 7\right]$$

$$=\frac{4}{5}:\left[\frac{8}{5}:\left(\frac{8}{3}\right)-\frac{7}{5}\right]$$

$$=\frac{4}{5}:\left[\frac{\cancel{8}}{5}\cdot\frac{3}{\cancel{8}}-\frac{7}{5}\right]$$

$$=\frac{4}{5}:\left(\frac{3}{5}-\frac{7}{5}\right)$$

$$=\frac{4}{5}:\left(-\frac{4}{5}\right)$$

$$=\frac{\cancel{4}}{\cancel{5}}\cdot\left(-\frac{\cancel{5}}{\cancel{4}}\right)=-1$$

CEVAP: D

18.

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

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

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

$$=2-\frac{2}{3}=\frac{6-2}{3}=\frac{4}{3}$$

CEVAP: D

19.

$$\frac{\left(1+\frac{1}{4}\right)\cdot\left(1+\frac{1}{5}\right)\cdots\left(1+\frac{1}{39}\right)}{\left(1-\frac{1}{3}\right)\cdot\left(1-\frac{1}{4}\right)\cdots\left(1-\frac{1}{11}\right)}$$

$$=\frac{\frac{\cancel{5}}{\boxed{4}}\cdot\frac{\cancel{6}}{\cancel{5}}\cdots\frac{\boxed{40}}{\cancel{39}}}{\frac{\boxed{2}}{\cancel{3}}\cdot\frac{\cancel{3}}{\cancel{4}}\cdots\frac{\cancel{10}}{\boxed{11}}}=\frac{\frac{40}{4}}{\frac{2}{11}}$$

$$=\frac{\frac{10}{2}}{11}=\overset{5}{\cancel{10}}\cdot\frac{11}{\cancel{2}}=5\cdot 11=55$$

CEVAP: E

20.

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

$$=\left(\frac{4}{3}-\frac{\cancel{5}}{\cancel{3}}+\frac{\cancel{5}}{\cancel{3}}\right)\cdot\left(\frac{3}{2}\right)$$

$$=\frac{4}{\cancel{3}}\cdot\frac{\cancel{3}}{2}=\frac{4}{2}$$

$$=2$$

CEVAP: D