

$$1) \text{ Άσκηση } A = - \frac{(-1) \cdot (-3) \cdot (-4)}{-6 - (-2 + 20)} = \underline{\hspace{2cm}}$$

$$B = \frac{2}{3} - \left(+\frac{1}{9}\right) : \left(-\frac{6}{2}\right) \underline{\hspace{2cm}}$$

$$\Gamma = \left[\frac{1}{5} - \left(-\frac{7}{10}\right) : (-7)\right] \cdot [0,2 \cdot (-20) - (-0,5) \cdot (-4)] \underline{\hspace{2cm}}$$

i) Να δείξετε ότι $A = -\frac{1}{2}$, $B = \frac{5}{6}$ και $\Gamma = -\frac{3}{5}$

ii) Με τις τιμές A, B και Γ που βρήκατε να υπολογίσετε τις τιμές των παραστάσεων.

α) $A - B \cdot \Gamma = \underline{\hspace{2cm}}$

β) $(A - B) \cdot \Gamma = \underline{\hspace{2cm}}$

γ) $\Gamma - B : A = \underline{\hspace{2cm}}$

δ) $\frac{A}{B} - \Gamma = \underline{\hspace{2cm}}$

$$2) \text{ 'Αγωνία } A = - \frac{(-2) \cdot (-3) \cdot (-1)}{-3 - (-2+8)} = \dots\dots\dots$$

$$B = \frac{1}{2} - \frac{1}{2} : \frac{3}{2} = \dots\dots\dots$$

$$\Gamma = \left[\frac{1}{4} - \left(-\frac{3}{2} \right) : (-2) \right] \cdot [0,1 \cdot (-10) - (-0,1) \cdot (-5)]$$

α) Να δείξετε ότι $A = -\frac{9}{3}$, $B = \frac{1}{6}$ και $\Gamma = \frac{3}{2}$.

β) Για τις παραπάνω τιμές των A , B και Γ να βρείτε τις τιμές των παραστάσεων.

i) $B - A \cdot \Gamma = \dots\dots\dots$

ii) $(B - A) \cdot \Gamma = \dots\dots\dots$

iii) $B - A : \Gamma = \dots\dots\dots$

Άσκηση 3

i) Να υπολογίσετε την τιμή των παραστάσεων:

$$A = 3 \cdot (-7 + 6) : 6 - 5 \cdot (-10 + 11) : 10$$

$$B = (-\frac{1}{5}) : (\frac{3}{5}) - (+6) : (-\frac{2}{3} + \frac{1}{3}) + (-\frac{1}{2}) \cdot (-\frac{2}{3})$$

$$\Gamma = 1 - 3 \cdot [5 - (-2) \cdot (-3) - \frac{1}{2}] : (2 - \frac{5}{2})$$

ii) Για $A = -1$, $B = 18$ και $\Gamma = -8$ να βρείτε την τιμή των παραστάσεων.

α) $(A - \Gamma) \cdot (\frac{1}{B+3}) =$

Απάντηση: $\frac{1}{3}$

β) $(-B - \Gamma) \cdot A =$

Απάντηση: 10

γ) $(A + \Gamma) : B =$

Απάντηση: $-\frac{1}{2}$

Άσκηση 4

i) Να υπολογίσετε την τιμή των παραστάσεων

$$\Delta = (-1 + \frac{1}{3}) : (-\frac{3}{2}) - (1\frac{1}{4} - \frac{1}{3}) : 1\frac{1}{5}$$

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

ii) Για $\Delta = -\frac{23}{72}$ κ' $E = \frac{13}{84}$

να υπολογίσετε την τιμή της παράστασης: $-7 \cdot (+12) \cdot (-E) - (-8) \cdot (+9) \cdot \Delta$
απάντηση: -10

$$1) \underline{\text{Άσκηση}} \quad A = - \frac{(-1) \cdot (-3) \cdot (-4)}{-6 - (-2 + 20)} = \frac{-(-12)}{-6 - (+18)} =$$

$$\frac{+12}{-6 - 18} = \frac{+12}{-24} = -\frac{1}{2}$$

$$B = \frac{2}{3} - \left(+\frac{1}{2} \right) : \left(-\frac{6}{2} \right) = \frac{2}{3} - \left(+\frac{1}{2} \right) \cdot \left(-\frac{2}{6} \right) =$$

$$\frac{2}{3} + \frac{1}{6} = \frac{4}{6} + \frac{1}{6} = \frac{5}{6}$$

$$\Gamma = \left[\frac{1}{5} - \left(-\frac{7}{10} \right) : (-7) \right] \cdot \left[0,2 \cdot (-20) - (-0,5) \cdot (-4) \right] =$$

$$\left[\frac{1}{5} - \left(-\frac{7}{10} \right) \cdot \left(-\frac{1}{7} \right) \right] \cdot (-4 - 2) = \left(\frac{1}{5} - \frac{1}{10} \right) \cdot (-6) =$$

$$\left(\frac{2}{10} - \frac{1}{10} \right) \cdot (-6) = \frac{1}{10} \cdot \left(-\frac{6}{1} \right) = -\frac{6}{10} \stackrel{:2}{=} -\frac{3}{5}$$

i) Να δείξετε ότι $A = -\frac{1}{2}$, $B = \frac{5}{6}$ και $\Gamma = -\frac{3}{5}$

ii) Με τις τιμές A, B και Γ που βρήκατε να υπολογίσετε τις τιμές των Παραστάσεων.

$$\alpha) A - B \cdot \Gamma \stackrel{\text{dvc}}{=} -\frac{1}{2} - \frac{5}{6} \cdot \left(-\frac{3}{5} \right) = -\frac{1}{2} + \frac{3}{6} = -\frac{1}{2} + \frac{1}{2} = 0$$

$$\beta) (A - B) \cdot \Gamma \stackrel{\text{dvc}}{=} \left(-\frac{1}{2} - \frac{5}{6} \right) \cdot \left(-\frac{3}{5} \right) = \left(-\frac{3}{6} - \frac{5}{6} \right) \cdot \left(-\frac{3}{5} \right) = \left(-\frac{8}{6} \right) \cdot \left(-\frac{3}{5} \right) = \frac{4}{5}$$

$$\gamma) \Gamma - B : A \stackrel{\text{dvc}}{=} -\frac{3}{5} - \frac{5}{6} : \left(-\frac{1}{2} \right) = -\frac{3}{5} - \frac{5}{6} \cdot \left(-\frac{2}{1} \right) = -\frac{3}{5} + \frac{5}{3} = \frac{-9}{15} + \frac{25}{15} = \frac{16}{15}$$

$$\delta) \frac{A}{B} - \Gamma \stackrel{\text{dvc}}{=} \frac{-\frac{1}{2}}{\frac{5}{6}} - \left(-\frac{3}{5} \right) = -\frac{6}{10} + \frac{3}{5} =$$

$$= -\frac{6}{10} + \frac{6}{10} = 0$$

$$2) \text{ 'Αγώνες } A = - \frac{(-2) \cdot (-3) \cdot (-1)}{-3 - (-2+8)} = \frac{-(-6)}{-3 - (+6)} = \frac{+6}{-3-6} =$$

$$B = \frac{1}{2} - \frac{1}{2} : \frac{3}{2} = \frac{1}{2} - \frac{1}{2} \cdot \frac{2}{3} = \frac{1}{2} - \frac{1}{3} = \frac{3}{6} - \frac{2}{6} = \frac{1}{6}$$

$$\Gamma = \left[\frac{1}{4} - \left(-\frac{3}{2} \right) : (-2) \right] \cdot [0,1 \cdot (-10) - (-0,4) \cdot (-5)] =$$

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

$$= \left(-\frac{2}{4} \right) \cdot \left(-\frac{3}{1} \right) = +\frac{6}{4} = \frac{3}{2}$$

α) Να δείξετε ότι $A = -\frac{2}{3}$, $B = \frac{1}{6}$ και $\Gamma = \frac{3}{2}$.

β) Για τις παραπάνω τιμές των A , B και Γ να βρείτε τις τιμές των παραστάσεων.

$$i) B - A \cdot \Gamma \stackrel{\text{αυτ}}{=} \frac{1}{6} - \left(-\frac{2}{3} \right) \cdot \frac{3}{2} = \frac{1}{6} + 1 = \frac{1}{6} + \frac{6}{6} = \frac{7}{6} = 1\frac{1}{6}$$

$$ii) (B - A) \cdot \Gamma \stackrel{\text{αυτ}}{=} \left[\frac{1}{6} - \left(-\frac{2}{3} \right) \right] \cdot \frac{3}{2} = \left(\frac{1}{6} + \frac{2}{3} \right) \cdot \frac{3}{2} =$$

$$= \left(\frac{1}{6} + \frac{4}{6} \right) \cdot \frac{3}{2} = \frac{5}{6} \cdot \frac{3}{2} = \frac{5}{4} = 1\frac{1}{4}$$

$$iii) B - A : \Gamma \stackrel{\text{αυτ}}{=} \frac{1}{6} - \left(-\frac{2}{3} \right) : \frac{3}{2} = \frac{1}{6} - \left(-\frac{2}{3} \right) \cdot \frac{2}{3} =$$

$$= \frac{1}{6} + \frac{4}{9} = \frac{3}{18} + \frac{8}{18} = \frac{11}{18}$$

Akten 3

$$i) A = 3 \cdot (-7 + 6) : 6 - 5 \cdot (-10 + 11) : 10 =$$

$$3 \cdot (-1) : 6 - 5 \cdot (+1) : 10 =$$

$$-3 : 6 - 5 : 10 = -\frac{3}{6} - \frac{5}{10} = -\frac{1}{2} - \frac{1}{2} = -\frac{2}{2} = -1$$

$$B = (-\frac{1}{5}) : (\frac{3}{5}) - (+6) : (-\frac{2}{3} + \frac{1}{3}) + (-\frac{1}{2}) \cdot (-\frac{2}{3}) =$$

$$(-\frac{1}{5}) \cdot (\frac{5}{3}) - (+6) : (-\frac{1}{3}) + \frac{1}{3} =$$

$$-\frac{1}{3} - (+6) \cdot (-\frac{3}{1}) + \frac{1}{3} = +\frac{18}{1} = \boxed{+18} = \boxed{18}$$

$$\Gamma = 1 - 3 \cdot [5 - (-2) \cdot (-3) - \frac{1}{2}] : (\frac{2}{1} - \frac{5}{2}) =$$

$$1 - 3 \cdot (5 - 6 - \frac{1}{2}) : (\frac{4}{2} - \frac{5}{2}) = 1 - 3 \cdot (-\frac{1}{2} - \frac{1}{2}) : (-\frac{1}{2}) =$$

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

$$1 - 9 = \boxed{-8}$$

$$ii) a) (A - \Gamma) \cdot (\frac{1}{B+3}) \stackrel{\text{avz}}{=} [-1 - (-8)] \cdot \frac{1}{18+3} = (-1+8) \cdot \frac{1}{21} =$$

$$= \frac{7}{1} \cdot \frac{1}{21} = \frac{7}{21} \stackrel{:7}{=} \boxed{\frac{1}{3}}$$

$$b) (-B - \Gamma) \cdot A \stackrel{\text{avz}}{=} [-18 - (-8)] \cdot (-1) = (-18+8) \cdot (-1) =$$
$$= (-10) \cdot (-1) = +10 = \boxed{10}$$

$$c) (A + \Gamma) : B \stackrel{\text{avz}}{=} [-1 + (-8)] : 18 = (-9) : 18 =$$

$$= \frac{-9}{18} \stackrel{:9}{=} \boxed{\frac{-1}{2}}$$

Agung 4

$$i) \Delta = (-1 + \frac{1}{3}) : (-\frac{3}{2}) - (1\frac{1}{4} - \frac{1}{3}) : 1\frac{1}{5} =$$

$$(-\frac{1}{1} + \frac{1}{3}) \cdot (-\frac{2}{3}) - (\frac{5}{4} - \frac{1}{3}) : \frac{6}{5} =$$

$$(-\frac{3}{3} + \frac{1}{3}) \cdot (-\frac{2}{3}) - (\frac{15}{12} - \frac{4}{12}) \cdot (\frac{5}{6}) =$$

$$(-\frac{2}{3}) \cdot (-\frac{2}{3}) - (\frac{11}{12}) \cdot (\frac{5}{6}) = \frac{4}{9} - \frac{55}{72} =$$

$$\frac{32}{72} - \frac{55}{72} = -\frac{23}{72}$$

$$E = \frac{(\frac{2}{3} - \frac{1}{4}) - (1 - \frac{1}{2})}{\frac{5}{-2} + \frac{-7}{9} - 1} = \frac{\frac{2}{3} - \frac{1}{4} - 1 + \frac{1}{2}}{-\frac{5}{2} - \frac{7}{9} - \frac{9}{9}} =$$

$$\frac{\frac{8}{12} - \frac{3}{12} - \frac{12}{12} - \frac{6}{12}}{-\frac{14}{9}} = \frac{\frac{8}{12} - \frac{21}{12}}{-7} = \frac{-\frac{13}{12}}{-7} = +\frac{13}{84}$$

$$ii) -7 \cdot (+12) \cdot (-E) - (-8) \cdot (+9) \cdot \Delta \stackrel{2002}{=} \\ -84 \cdot [- (+\frac{13}{84})] + 72 \cdot (-\frac{23}{72}) = \\ -84 \cdot (-\frac{13}{84}) - 72 \cdot \frac{23}{72} = +13 - 23 = \\ = -10$$