

$$7. \quad (B) \quad \mu p 20 - \sigma w 40 - \sigma w 70 + \mu p 50 =$$

$$= \mu p (90 - 70) - \sigma w (90 - 50) - \sigma w 70 + \mu p 50$$

$$= \cancel{\sigma w 70} - \cancel{\mu p 50} - \cancel{\sigma w 70} + \cancel{\mu p 50}$$

$$= 0$$

$$8. \quad (B) \quad \mu p^2 36 + \varepsilon \varphi 130 \cdot \varepsilon \varphi 40 + \sigma w^2 216$$

$$\mu p^2 36 + \varepsilon \varphi (90 + 40) \cdot \varepsilon \varphi 40 + \sigma w^2 (180 + 36)$$

$$\mu p^2 36 + \varepsilon \varphi (90 - (-40)) + \varepsilon \varphi 40 + (-\sigma w 36)^2$$

$$= \mu p^2 36 + \sigma \varphi (-40) \cdot \varepsilon \varphi 40 + \sigma w^2 36$$

$$= 1 - \sigma \varphi 40 \cdot \varepsilon \varphi 40$$

$$= 1 - 1 = 0$$

$$11. \textcircled{B} \quad \frac{n\mu(2n+\theta) \cdot \sigma\psi\left(\frac{3n}{2}-\theta\right)\sigma w(3n+\theta)}{\sigma w\left(\frac{3n}{2}+\theta\right) \cdot \varepsilon\psi(n+\theta)\sigma w\left(\frac{n}{2}+\theta\right)}$$

$\ast$

$$\bullet n\mu(2\cancel{n}+\theta) = n\mu\theta$$

$$\bullet \sigma\psi\left(\frac{3n}{2}-\theta\right) = \sigma\psi\left(\cancel{\frac{7n}{2}}+\frac{n}{2}-\theta\right) =$$

$$= \sigma\psi\left(n+\frac{n}{2}-\theta\right) = \sigma\psi\left(\frac{n}{2}-\theta\right) = \varepsilon\psi\theta$$

$$\bullet \sigma w(3n+\theta) = \sigma w(2\cancel{n}+n+\theta) = \sigma w(n+\theta) = -\sigma w\theta$$

$$\bullet \sigma w\left(\frac{3n}{2}+\theta\right) = \sigma w\left(\frac{4n}{2}-\frac{n}{2}+\theta\right) = \sigma w(\cancel{2n}-\frac{n}{2}+\theta)$$

$$= \sigma w\left(-\frac{n}{2}+\theta\right) = \sigma w\left(-\left(\frac{n}{2}-\theta\right)\right)$$

$$= \sigma w\left(\frac{n}{2}-\theta\right) = n\mu\theta$$

$$\varepsilon_4(n+\theta) = \varepsilon_4\theta$$

$$\sigma_w\left(\frac{n}{2}+\theta\right) = \sigma_w\left(\frac{n}{2}-(-\theta)\right) =$$

$$= \eta_p(-\theta) = -\eta_p\theta$$

$$\begin{aligned} & \frac{\textcircled{*}}{\quad} \frac{\cancel{\eta_p\theta} \quad \cancel{\varepsilon_4\theta} (-\sigma_w\theta)}{\cancel{\eta_p\theta} \quad \cancel{\varepsilon_4\theta} (-\eta_p\theta)} \\ & = \underline{\underline{+\sigma_4\theta}} \end{aligned}$$

9.

(b)

$$\frac{\angle P \frac{0}{9} \cdot \angle W \frac{20}{9} \cdot \angle P \frac{40}{7}}{\angle P \frac{80}{9} \angle P \frac{30}{7} \angle W \frac{70}{9}}$$

$$= \frac{\angle P 20 \cdot \angle W 40 \cdot \angle P \frac{40}{7}}{\angle P 160 \angle P \frac{30}{7} \angle W 140}$$

$$= \frac{\angle P 20 \angle W 40 \angle P \frac{40}{7}}{\angle P (180-20) \angle P \frac{30}{7} \angle W (180-40)}$$

$$= \frac{\cancel{\angle P 20} \cancel{\angle W 40} \angle P \frac{40}{7}}{\cancel{\angle P 20} (-\cancel{\angle W 40}) \angle P \frac{30}{7}}$$

$$= - \frac{\angle P \frac{40}{7}}{\angle P \frac{30}{7}} = \frac{- \angle P (180 - \frac{30}{7})}{\angle P \frac{30}{7}}$$

$$= \frac{- \cancel{\angle P \frac{30}{7}}}{\cancel{\angle P \frac{30}{7}}} = \boxed{-1}$$

$$12. \textcircled{B} \quad \frac{\mu_p(13n+\theta) \cdot \varepsilon\psi\left(\frac{11n}{2}+\theta\right)}{\sigma\psi(17n-\theta) \cdot \sigma w\left(\frac{13n}{2}-\theta\right)} \quad \underline{\underline{\textcircled{*}}}$$

$$\bullet \mu_p(13n+\theta) = \mu_p(\cancel{13}n+n+\theta) = \mu_p(n+\theta) = -\mu\theta$$

$$\bullet \varepsilon\psi\left(\frac{11n}{2}+\theta\right) = \varepsilon\psi\left(\frac{10n}{2}+\frac{n}{2}+\theta\right) =$$

$$= \varepsilon\psi\left(5n+\frac{n}{2}+\theta\right) = \varepsilon\psi(\cancel{5}n+n+\frac{n}{2}+\theta)$$

$$= \varepsilon\psi\left(n+\frac{n}{2}+\theta\right) = \varepsilon\psi\left(\frac{n}{2}+\theta\right).$$

$$= \varepsilon\psi\left(\frac{n}{2}-(-\theta)\right) = \sigma\psi(-\theta) =$$

$$= -\sigma\psi\theta.$$

$$\bullet \sigma\psi(17n-\theta) = \sigma\psi(\cancel{16}n+n-\theta) = \sigma\psi(n-\theta) = -\sigma\psi\theta$$

$$\bullet \sigma w\left(\frac{13n}{2}-\theta\right) = \sigma w\left(\frac{12n}{2}+\frac{n}{2}-\theta\right) =$$

$$= \sigma w(\cancel{12}n+\frac{n}{2}-\theta) = \sigma w\left(\frac{n}{2}-\theta\right) = \mu\theta$$

⊗

$$\frac{-10 \cdot (-50)}{}$$

$$-50$$

$$10$$

$$= -1$$

←

$$\frac{\sigma_w \left(x - \frac{n}{2} \right) + n p (3n - x) - \sigma_w \left(\frac{5n}{2} + x \right)}{4 n p (7n - x) \cdot \sigma_w (x - 4n)} \quad \textcircled{*}$$

$$\begin{aligned} \bullet \sigma_w \left(x - \frac{n}{2} \right) &= \sigma_w \left(- \left(\frac{n}{2} - x \right) \right) = \sigma_w \left(\frac{n}{2} - x \right) = \\ &= n p x \end{aligned}$$

$$\bullet n p (3n - x) = n p (\cancel{2n} + n - x) = n p (n - x) = n p x$$

$$\begin{aligned} \bullet \sigma_w \left(\frac{5n}{2} + x \right) &= \sigma_w \left(\frac{4n}{2} + \frac{n}{2} + x \right) = \sigma_w (\cancel{2n} + \frac{n}{2} + x) \\ &= \sigma_w \left(\frac{n}{2} + x \right) = \sigma_w \left(\frac{n}{2} - (-x) \right) = n p (-x) \\ &= -n p x \end{aligned}$$

$$\bullet n p (7n - x) = n p (\cancel{6n} + n - x) = n p (n - x) = n p x$$

$$\bullet \sigma_w (x - \cancel{4n}) = \sigma_w x$$

$$\textcircled{*} \frac{n p x + n p x + n p x}{4 n p x \sigma_w x} = \frac{\cancel{3 n p x}}{4 n p x \sigma_w x}$$

Αναγωγή στο 1ο Τεταρτημόριο

$$\eta\mu(-x) = -\eta\mu x$$

$$\sigma\omega(-x) = \sigma\omega x$$

$$\varepsilon\psi(-x) = -\varepsilon\psi x$$

$$\sigma\psi(-x) = -\sigma\psi x$$

$$\eta\mu(\pi-x) = \eta\mu x$$

$$\sigma\omega(\pi-x) = -\sigma\omega x$$

$$\varepsilon\psi(\pi-x) = -\varepsilon\psi x$$

$$\sigma\psi(\pi-x) = -\sigma\psi x$$

$$\eta\mu(\pi+x) = -\eta\mu x$$

$$\sigma\omega(\pi+x) = -\sigma\omega x$$

$$\varepsilon\psi(\pi+x) = \varepsilon\psi x$$

$$\sigma\psi(\pi+x) = \sigma\psi x$$

$$\eta\mu\left(\frac{\pi}{2}-x\right) = \sigma\omega x$$

$$\sigma\omega\left(\frac{\pi}{2}-x\right) = \eta\mu x$$

$$\varepsilon\psi\left(\frac{\pi}{2}-x\right) = \sigma\psi x$$

$$\sigma\psi\left(\frac{\pi}{2}-x\right) = \varepsilon\psi x$$

Επώρα Μαθήματα

11

①

②

⑤ α β

⑦ α

⑧ β

⑪ α

⑫ α

16

②

④

⑦

⑧

⑩