

الف) $n^2 - n - 2 = 0$ $n = \frac{1 \pm \sqrt{1+8}}{2}$ $m = 3$ $n = 2$

ب) $m = 2$ $a = -1$ $n = 2$
 $m-1 = 1$

۲

۳(۱) - ۱ = ۲ $(1) + a < 2$ $a \leq 1$
 $a \in (-\infty, 1]$ $R = [2, +\infty)$

۲

$R \quad m-1 \Rightarrow [2, +\infty) \Rightarrow an + a - 1 < 2$
 $a \in (-\infty, 1] \Rightarrow a(m+1) < 3$ $n+1 < \frac{3}{a} \Rightarrow n < \frac{3-a}{a}$
 $a(0) + a - 1 < 2$ $|a| < 3$ $a \in (-3, 3)$

۲

الف) $y_1 = n_1^2 + 2$ $y_2 = n_2^2 + 2$ $n_1^2 + 2 = n_2^2 + 2 \Rightarrow n_1 = n_2$

$n = y^2 + 2 \Rightarrow \sqrt{n-2} = y$

ب) $\{(-1, 3) \text{ و } (-1, 1)\}$ $\{(-1, 3) \text{ و } (-1, 1)\}$

۲

الف) $y = \frac{2n+1}{n-3}$ $n = \frac{3y+1}{y-2}$ $y = -\frac{2n-1}{n-3}$

۲

ب) $D_y = R - \{-2\} \Rightarrow \frac{2(n+2)}{n+2} = 2$ $y = 2 \rightarrow$

الف) $y_1 = \sqrt{m_1 - 2}$ $y_2 = \sqrt{m_2 - 2} \Rightarrow \sqrt{m_1 - 2} = \sqrt{m_2 - 2}$ $m_1 = m_2$
 $n = \sqrt{y - 2}$ $y = n^2 + 2$ ✓

ب) $\frac{-b}{2a} \Rightarrow \frac{1}{2} = 1$ $m_1^2 - 1m_1 + 2 = m_2^2 - 1m_2 + 2$ $(m_1 - m_2)(m_1 + m_2) - 1(m_1 - m_2)$
 $= (m_1 - m_2)(m_1 + m_2 - 1) = 0$ $m_1, m_2 > 2 \Rightarrow m_1 = m_2$ $y > 2 \Rightarrow \sqrt{n+1+2}$ ✓

$n = y + \sqrt{y}$ ~~$n + \frac{1}{\sqrt{y}} = y + \sqrt{y} + \frac{1}{\sqrt{y}}$~~ $n + \frac{1}{\sqrt{y}} = y + \sqrt{y} + \frac{1}{\sqrt{y}} \Rightarrow n + \frac{1}{\sqrt{y}} = (\sqrt{y} + \frac{1}{\sqrt{y}})^2$
 $\Rightarrow \sqrt{n + \frac{1}{\sqrt{y}}} - \frac{1}{\sqrt{y}} = \sqrt{y} \Rightarrow n + \frac{1}{\sqrt{y}} + \frac{1}{\sqrt{y}} = \sqrt{n + \frac{1}{\sqrt{y}}} = y = n + \frac{1}{\sqrt{y}} - \sqrt{n + \frac{1}{\sqrt{y}}}$
 $a=1$ $b=\frac{1}{\sqrt{y}}$ $c=-\frac{1}{\sqrt{y}}$ $a+1b+1c = 1+1-1 = 1$ ✓

✓

$\frac{m_1}{\sqrt{m_1^2 - 2}} = \frac{m_2}{\sqrt{m_2^2 - 2}} \Rightarrow \frac{m_1}{m_1^2 - 2} = \frac{m_2}{m_2^2 - 2}$ $m_1^2 m_2^2 - 2m_1^2 = m_2^2 m_1^2 - 2m_2^2$
 $m_1^2 = m_2^2 \Rightarrow m_1 = m_2$ ✓
 $n = \frac{y}{\sqrt{y^2 - 2}} \Rightarrow n^2 = \frac{y^2}{y^2 - 2} \Rightarrow y^2 = \frac{2n^2}{n^2 - 1} \Rightarrow y = \frac{n\sqrt{2}}{\sqrt{n^2 - 1}}$ ✓

$\frac{n}{1+|n|} = -\frac{1}{\omega} \Rightarrow \frac{n}{1-n} = -\frac{1}{\omega}$ $\omega n = -1 + n$ $n = -\frac{1}{\omega}$
 $f(-\frac{1}{\omega}) = \frac{-1}{\omega} \mid g^{-1}(\frac{1}{\omega}) \Rightarrow \sqrt{n} - 1 = -\frac{1}{\omega} \Rightarrow \sqrt{n} = \frac{1}{\omega} \Rightarrow n = \frac{1}{\omega^2} = g^{-1}(-\frac{1}{\omega})$

$-\frac{1}{\omega} + \frac{1}{\omega} = \frac{-\omega + 1\omega}{\omega\omega} = \frac{-1\omega}{\omega\omega} = -\frac{1}{\omega}$ ✓

$f^{-1}(n) = \sqrt{n-1} \Rightarrow n^2 = y-1$ $g(n) = n^2 + 1$

$g(n) = n^2 + 1 + \sqrt{n^2 + 1} = 12 \Rightarrow t + \sqrt{t} = 12 \Rightarrow t = 9$
 $n^2 + 1 = 9 \Rightarrow n = 2$ $g^{-1}(12) = 2$ ✓

مراجعة