근호를 두 개 포함한 무리방정식 예제
(Example of Irrational Equations with Two Radicals)

Example of Irrational Equations with Two Radicals

Start End

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$$\sqrt{x+2} - \sqrt{3-x} = 1 \cdots (1)$$

Example of Irrational Equations with Two Radicals

Start End

$$\begin{aligned} \sqrt{x+2} - \sqrt{3-x} &= 1 \quad \cdots (1) \\ \sqrt{x+2} &= \sqrt{3-x} + 1 \end{aligned}$$

Example of Irrational Equations with Two Radicals

Start End

$$\begin{aligned} \sqrt{x+2} - \sqrt{3-x} &= 1 \quad \cdots (1) \\ \sqrt{x+2} &= \sqrt{3-x} + 1 \\ x+2 &= 3 - x + 2\sqrt{3-x} + 1 \end{aligned}$$

Start End

$$\begin{aligned}
\sqrt{x+2}-\sqrt{3-x} &= 1 \quad \cdots(1) \\
\sqrt{x+2} &= \sqrt{3-x}+1 \\
x+2 &= 3-x+2\sqrt{3-x}+1 \\
2x-2 &= 2\sqrt{3-x}
\end{aligned}$$

Example of Irrational Equations with Two Radicals

Start End

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\begin{aligned}
\sqrt{x+2}-\sqrt{3-x} &= 1 \quad \cdots(1) \\
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x^2-2x+1 &= 3-x
\end{aligned}
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x^2-2x+1 &= 3-x \\
x^2-x-2 &= 0 \\
(x-2)(x+1) &= 0
\end{aligned}
$$

Start End

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$$

$x=$ 2 일 때 (1)식은 성립하여 해가 된다.

$$
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(x-2)(x+1) &= 0 \qquad\qquad x=2,-1
\end{aligned}
$$

$x=\quad 2$ 일 때 (1)식은 성립하여 해가 된다.
$x=-1$ 일 때 (1)식은 성립하지 않으므로 무연근 이다.

$$
\begin{aligned}
\sqrt{x+2}-\sqrt{3-x} &= 1 \quad \cdots(1) \\
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x^2-x-2 &= 0 \\
(x-2)(x+1) &= 0 \qquad\qquad x=2,-1
\end{aligned}
$$

$x = \quad 2$ 일 때 (1)식은 성립하여 해가 된다.
$x = -1$ 일 때 (1)식은 성립하지 않으므로 무연근 이다.

$$\therefore x = 2$$

Github:
https://min7014.github.io/math20210219001.html

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