

<u>SUBFIELDS</u>	<u>SPLITS</u>	<u>SUBGROUPS</u>
$\mathbb{Q}[3^{114}, i]^*$	$X^4 - 3$	$\langle e \rangle^{**}$

$\mathbb{Q}[3^{112}, i]^*$	$(X^2 - 3)(X^2 + 1)$	$\{(3^{114}, i), (-3^{114}, i)\}^{**}$
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$\mathbb{Q}[i]^*$	$X^2 + 1$	$\{(3^{114}, i), (-3^{114}, i), (3^{114}i, i), (-3^{114}i, i)\}^{**}$
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$\mathbb{Q}[3^{114}]$		$\{(3^{114}, i), (3^{114}, -i)\}$
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$\mathbb{Q}[3^{114}i]$		$\{(3^{114}, i), (-3^{114}, -i)\}$
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$\mathbb{Q}[3^{112}i]^*$	$X^2 + 3$	$\{(3^{114}, i), (-3^{114}, i), (3^{114}i, -i), (-3^{114}i, -i)\}^{**}$
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$\mathbb{Q}[3^{112}]^*$	$X^2 - 3$	$\{(3^{114}, i), (-3^{114}, i), (3^{114}, -i), (-3^{114}, -i)\}^{**}$
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\mathbb{Q}^*	$X - 1$	$\text{GAL}_{\mathbb{Q}}(\mathbb{Q}[3^{114}, i])^{**}$
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* = NORMAL SUBFIELD

** = NORMAL SUBGROUP

$X^4 - 3$ HAS ONE BUT NOT ALL ROOTS

IN $\mathbb{Q}[3^{114}]$ AND $\mathbb{Q}[3^{114}i]$, HENCE THESE ARE NOT NORMAL SUBFIELDS.