

Integer quotient	Reminder	coefficient
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2	$\overline{23}$ 47	1	$a_0 = 1$
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2	$\overline{11}$ 23	1	$a_1 = 1$
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2	$\overline{5}$ 11	1	$a_2 = 1$
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2	$\overline{2}$ 5	1	$a_3 = 1$
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2	$\overline{1}$ 2	0	$a_4 = 0$
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2	$\overline{0}$ 1	1	$a_5 = 1$
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Thus, $47_{10} = 101111_2$