

Table 2-7 Summary of addition and subtraction rules for binary numbers.

<i>Number System</i>	<i>Addition Rules</i>	<i>Negation Rules</i>	<i>Subtraction Rules</i>
Unsigned	Add the numbers. Result is out of range if a carry out of the MSB occurs.	Not applicable	Subtract the subtrahend from the minuend. Result is out of range if a borrow out of the MSB occurs.
Signed magnitude	(same sign) Add the magnitudes; overflow occurs if a carry out of the MSB occurs; result has the same sign. (opposite sign) Subtract the smaller magnitude from the larger; overflow is impossible; result has the sign of the larger.	Change the number's sign bit.	Change the sign bit of the subtrahend and proceed as in addition.
Two's complement	Add, ignoring any carry out of the MSB. Overflow occurs if the carries into and out of the MSB are different.	Complement all bits of the number; add 1 to the result.	Complement all bits of the subtrahend and add to the minuend with an initial carry of 1.
Ones' complement	Add; if there is a carry out of the MSB, add 1 to result. Overflow occurs if carries into and out of the MSB are different.	Complement all bits of the number.	Complement all bits of the subtrahend and proceed as in addition.