Comparison of (r-1)'s and r's complements

	(r-1)'s complement	r's complement
definition: given N		
with n digits	(r ⁿ -1) -N	r ⁿ - N
computation involved		
in obtaining the	digitwise (bitwise) complementation	digitwise (bitwise) complementation + 1
complement		
number of zero	two (+0 and -0)	one
subtraction operation is	$M - N \rightarrow M + (r^n - 1) - N$	$M - N \rightarrow M + r^n - N$
to be done as shown	$= \mathbf{r}^{n} + \mathbf{M} - \mathbf{N} - 1 \dots (\mathbf{A})$	$= \mathbf{r}^{\mathbf{n}} + \mathbf{M} - \mathbf{N} \dots (\mathbf{C})$
	$= (\mathbf{r}^{n} - 1) - (\mathbf{N} - \mathbf{M}) \dots (\mathbf{B})$	$= r^{n} - (N - M) \dots (D)$
if M > N	Refer to expression (A)	Refer to expression (C)
	<i>How can we tell?</i> There is a carry.	How can we tell? There is a carry.
	<i>How to produce M-N?</i>	<i>How to produce M-N?</i>
	(1) Subtract r^n by discarding the carry.	Subtract r ⁿ by discarding the carry.
	(2) Add 1 to it.	
if M < N	Refer to expression (B).	Refer to expression (D).
	<i>How can we tell?</i> There is no carry.	How can we tell? There is no carry.
	How to produce M-N (in sign-and-	How to produce M-N (in sign-and-
	magnitude)?	magnitude)?
	The result is negative and in (r-1)'s	The result is negative and in r's
	complement.	complement.
	(1) Perform $(r-1)$'s complement to	(1) Perform r's complement (i.e., (r-1)'s
	obtain (N-M).	complement plus 1) to obtain (N-
	(2) Prefix it with a minus sign to	M).
	indicate that it is negative.	(2) Prefix it with a minus sign to
		indicate that it is negative.
if M = N	Refer to expression (A).	Refer to expression (C).
	There is no carry. It is treated as if M <n,< td=""><td>There is a carry. It is treated as if M>N,</td></n,<>	There is a carry. It is treated as if M>N,
	producing a "-0" as the result.	producing a "0" as the result.