Integer division (stallings) Peneil and Paper method - Quotient 00000110 divident 1107 1001001 1.011 001110 1011 0000111 1011 01004 Remainder. Start A-O M+ divisor Q + dividend Count +n shift A,R A-A-M AKO Q0 +0 A - A+M Count = Count-1 Q+ Quotient A + Remainder END

1. Load the divisor into register M and dividend into A, Q registers. Note that Dividend must be represented in 2n bits and in 2's Complement

2. suift A, Q 1 bit left

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- 3. If M and A have the same right, perform A A-M; A - A+M; otherwise.
- 4. The puwious operation is successful if sign of A is the same before and after the operation.
 - a) If the operation is "successful" or A=0, then set Qo = 1
 - b.) If operation is not successful and A = 0, then set Qo+ 0 and restore the previous value of A. and restore
- 5. Repeat step 2. to step 4. as many times an there are bits in Q.
- 6. The remainder is in A. If the sign of Dividend and divisor are some, then Quotient is in Q. otherwise, correct quotient is the 2's complement of Q.

Q17/3	A	R	Count	
		1001	4	; initial Values.
0011 - Dividend.	1111	0010	4	; shift left
		0010	4	3 A-A+M
M = 0011	PITT	0010	3	; Restor A.
1110	1110	0100		; shift left.
0001	0001	0100		; A-A+M
		01001	2	, Restore . A .

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0.000

2 ; left shift A, Q 1100 1000 1000 2 ; MA + A+M washing and boal of Q0+1. 1111 1001 left shift 1111 0010 1 ; A + A+M 0010 0010 O ; Restore A. 0010 Remainder 2's Complement. Divident = Quotient x Divisor + Pemainder. 1-00 += -2×3 + (-1) wine puferniss forest resumment of 60 Princert steps to deb it. steps toads Divident = 0111 Count Divisor = 1101 0000 4 5 juited 0111 M=1101 0000 4 3 shiftleft 1110 1101 4 3 A+ A+M. 1110 3) Penton A 0000 1110 Star Plate ; NEA-A 000 | 1100 3; glift left 3; AAK AHT 0 1100 2 3 Reston A. 0001 1100 2; gluftleft. 0011 1000 2; At A+M 0 0 0 0 1000 0000 100 1; 8041

2 ; left shift A, Q 1100 1000 1000 2 ; A + A+M was the and book a Q0+1. 1111 1001 left shift 1111 0010 A+A+M 0010 0010 O ; Restore A. 0010 Remainder 2's Complement. Divident = Quotient x Divisor + Pemainder. home beforeign forest commende of (d Thunga 20 . if dold pt . code touch? Divident = 0111 Count Divisor = 1101 0000 4 5 juited ,0111 M=1101 0000 4) shiftleft 1110 1101 4 3 A+ A+M. 1110 3) Penton A 0000 1110 About But ? MED -NA 0001 1100 3; glift left 3; AAK AHT 0 1100 23 Reston A. 0001 1100 2; gluftleft. 0011 1000 2; At A+M 00 1000 0000 100 1; 8041

Integer division (stallings) Peneil and Paper method _ Quotient 0000110 _ divident 1011 10010011 divisor 001110 1011 00001111 1011 01004 - Remainder. Start A-O M+ divisor Q dividend Count +n shift A,R A-A-M Q0 +0 A - A+M Count = Count-1 A + Quotient A + Remainder END