

INSTR.	HEX CODE	CYC	FREG - Flags register							
			b7	b6	b5	b4	b3	b2	b1	b0
			S	Z	H	N	C			
DEC L	2D	1	*	*	*				1	x
DEC SP	3B	1	x	x	x					x
DJNZ,d	10 dd	2/3	x	x	x					x
EX AF,AF'	08	1	x	x	x					x
EX DE,HL	EB	1	x	x	x					x
EXX	D9	1 - (2)	x	x	x					x
HALT	76	1	x	x	x					x
IN A,(nn)	DB nn	3	x	x	x					x
IN A,(C)	ED 78	3	*	*	*				P	0
IN B,(C)	ED 40	3	*	*	*				P	0
IN C,(C)	ED 48	3	*	*	*				P	0
IN D,(C)	ED 50	3	*	*	*				P	0
IN E,(C)	ED 58	3	*	*	*				P	0
IN H,(C)	ED 60	3	*	*	*				P	0
IN L,(C)	ED 68	3	*	*	*				P	0
INC (HL)	34	3	*	*	*					0
INC A	3C	1	*	*	*					0
INC B	04	1	*	*	*					0
INC BC	03	1	x	x	x					x
INC C	0C	1	*	*	*					0
INC D	14	1	*	*	*					0
INC DE	13	1	x	x	x					x
INC E	1C	1	*	*	*					0
INC H	24	1	*	*	*					0
INC HL	23	1	x	x	x					x
INC L	2C	1	*	*	*					0
INC SP	33	1	x	x	x					x
JP (HL)	E9	1	x	x	x					x
JP C,nn	DA nn mm	3	x	x	x					x
JP mn	C3 nn mm	3	x	x	x					x
JP N,nn	FA nn mm	3	x	x	x					x
JP NC,nn	D2 nn mm	3	x	x	x					x
JP NZ,nn	F2 nn mm	3	x	x	x					x
JP P,nn	EA nn mm	3	x	x	x					x
JP PE,nn	E2 nn mm	3	x	x	x					x
JP PO,nn	CA nn mm	3	x	x	x					x
JP Z,nn	38 dd	2/3	x	x	x					x
JR C,d	18 dd	3	x	x	x					x
JR dd	30 dd	2/3	x	x	x					x
JR NC,d	20 dd	2/3	x	x	x					x
JR NZ,d	28 dd	2/3	x	x	x					x
JR Z,d	28 dd	2/3	x	x	x					x
LD (BC),A	02	2	x	x	x					x
LD (DE),A	12	2	x	x	x					x
LD (HL),A	77	2	x	x	x					x
LD (HL),B	70	2	x	x	x					x
LD (HL),C	71	2	x	x	x					x
LD (HL),D	72	2	x	x	x					x
LD (HL),E	73	2	x	x	x					x
LD (HL),H	74	2	x	x	x					x
LD (HL),L	75	2	x	x	x					x
LD (HL),n	36 nn	3	x	x	x					x
LD (mn),A	32 nn mm	4	x	x	x					x
LD (mn),HL	22 nn mm	5	x	x	x					x
LD A,(BC)	0A	2	x	x	x					x
LD A,(DE)	1A	2	x	x	x					x
LD A,(HL)	7E	2	x	x	x					x
LD A,(mn)	3A nn mm	4	x	x	x					x
LD A,A	7F	1	x	x	x					x
LD A,B	78	1	x	x	x					x
LD A,C	79	1	x	x	x					x
LD A,D	7A	1	x	x	x					x
LD A,E	7B	1	x	x	x					x
LD A,H	7C	1	x	x	x					x

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			b7	b6	b5	b4	b3	b2	b1	b0
			S	Z	H	N	C			
LD A,L	7D	1	x	x	x					x
LD A,n	3E nn	2	x	x	x					x
LD B,(HL)	46	2	x	x	x					x
LD B,A	47	1	x	x	x					x
LD B,B	40	1	x	x	x					x
LD B,C	41	1	x	x	x					x
LD B,D	42	1	x	x	x					x
LD B,E	43	1	x	x	x					x
LD B,H	44	1	x	x	x					x
LD B,L	45	1	x	x	x					x
LD B,n	06 nn	2	x	x	x					x
LD BC,nn	01 nn mm	3	x	x	x					x
LD C,(HL)	4E	2	x	x	x					x
LD C,A	4F	1	x	x	x					x
LD C,B	48	1	x	x	x					x
LD C,C	49	1	x	x	x					x
LD C,D	4A	1	x	x	x					x
LD C,E	4B	1	x	x	x					x
LD C,H	4C	1	x	x	x					x
LD C,L	4D	1	x	x	x					x
LD C,n	0E nn	2	x	x	x					x
LD D,(HL)	56	2	x	x	x					x
LD D,A	57	1	x	x	x					x
LD D,B	50	1	x	x	x					x
LD D,C	51	1	x	x	x					x
LD D,D	52	1	x	x	x					x
LD D,E	53	1	x	x	x					x
LD D,H	54	1	x	x	x					x
LD D,L	55	1	x	x	x					x
LD D,n	16 nn	2	x	x	x					x
LD DE,nn	11 nn mm	3	x	x	x					x
LD E,(HL)	5E	2	x	x	x					x
LD E,A	5F	1	x	x	x					x
LD E,B	58	1	x	x	x					x
LD E,C	59	1	x	x	x					x
LD E,D	5A	1	x	x	x					x
LD E,E	5B	1	x	x	x					x
LD E,H	5C	1	x	x	x					x
LD E,L	5D	1	x	x	x					x
LD E,n	1E nn	2	x	x	x					x
LD H,(HL)	66	2	x	x	x					x
LD H,A	67	1	x	x	x					x
LD H,B	60	1	x	x	x					x
LD H,C	61	1	x	x	x					x
LD H,D	62	1	x	x	x					x
LD H,E	63	1	x	x	x					x
LD H,H	64	1	x	x	x					x
LD H,L	65	1	x	x	x					x
LD H,n	2A nn	2	x	x	x					x
LD HL,(mn)	26 nn mm	5	x	x	x					x
LD HL,nn	21 nn mm	3	x	x	x					x
LD L,(HL)	6E	2	x	x	x					x
LD L,A	6F	1	x	x	x					x
LD L,B	68	1	x	x	x					x
LD L,C	69	1	x	x	x					x
LD L,D	6A	1	x	x	x					x
LD L,E	6B	1	x	x	x					x
LD L,H	6C	1	x	x	x					x
LD L,L	6D	1	x	x	x					x
LD L,n	2E nn	2	x	x	x					x
NEG	ED 44	2	*	*	*					1
NOP	00	1	x	x	x					x
OR (HL)	B6	2	*	*	0					0
OR A	B7	1	*	*	0					0

INSTR.	HEX CODE	CYC	FREG - Flags register							
			b7	b6	b5	b4	b3	b2	b1	b0
			S	Z	H	N	C			
OR B	B0	1	*	*	0					0
OR C	B1	1	*	*	0					0
OR D	B2	1	*	*	0					0
OR E	B3	1	*	*	0					0
OR H	B4	1	*	*	0					0
OR L	B5	1	*	*	0					0
OR n	F6 nn	2	*	*	0					0
OUT (n),A	D3 nn	3	x	x	x					x
OUT (C),A	ED 79	3	x	x	x					x
OUT (C),B	ED 41	3	x	x	x					x
OUT (C),C	ED 49	3	x	x	x					x
OUT (C),D	ED 51	3	x	x	x					x
OUT (C),E	ED 59	3	x	x	x					x
OUT (C),H	ED 61	3	x	x	x					x
OUT (C),L	ED 69	3	x	x	x					x
POP AF	F1	3	x	x	x					x
POP BC	C1	3	x	x	x					x
POP DE	D1	3	x	x	x					x
POP HL	E1	3	x	x	x					x
PUSH AF	F5	3	x	x	x					x
PUSH BC	C5	3	x	x	x					x
PUSH DE	D5	3	x	x	x					x
PUSH HL	E5	3	x	x	x					x
RES 0,(HL)	CB 86	3	x	x	x					x
RES 0,A	CB 87	2	x	x	x					x
RES 0,B	CB 80	2	x	x	x					x
RES 0,C	CB 81	2	x	x	x					x
RES 0,D	CB 82	2	x	x	x					x
RES 0,E	CB 83	2	x	x	x					x
RES 0,H	CB 84	2	x	x	x					x
RES 0,L	CB 85	2	x	x	x					x
RES 1,(HL)	CB 8E	3	x	x	x					x
RES 1,A	CB 8F	2	x	x	x					x
RES 1,B	CB 88	2	x	x	x					x
RES 1,C	CB 89	2	x	x	x					x
RES 1,D	CB 8A	2	x	x	x					x
RES 1,E	CB 8B	2	x	x	x					x
RES 1,H	CB 8C	2	x	x	x					x
RES 1,L	CB 8D	2	x	x	x					x
RES 2,(HL)	CB 96	3	x	x	x					x
RES 2,A	CB 97	2	x	x	x					x
RES 2,B	CB 90	2	x	x	x					x
RES 2,C	CB 91	2	x	x	x					x
RES 2,D	CB 92	2	x	x	x					x
RES 2,E	CB 93	2	x	x	x					x
RES 2,H	CB 94	2	x	x	x					x
RES 2,L	CB 95	2	x	x	x					x
RES 3,(HL)	CB 9E	3	x	x	x					x
RES 3,A	CB 9F	2	x	x	x					x
RES 3,B	CB 98	2	x	x	x					x
RES 3,C	CB 99	2	x	x	x					x
RES 3,D	CB 9A	2	x	x	x					x
RES 3,E	CB 9B	2	x	x	x					x
RES 3,H	CB 9C	2	x	x	x					x
RES 3,L	CB 9D	2	x	x	x					x
RES 4,(HL)	CB A6	3	x	x	x					x
RES 4,A	CB A7	2	x	x	x					x
RES 4,B	CB A0	2	x	x	x					x
RES 4,C	CB A1	2	x	x	x					

INSTR.	HEX CODE	CYC	FREG - Flags register							
			b7	b6	b5	b4	b3	b2	b1	b0
			S	Z	H	N	C			
RRC E	CB 0B	2	*	*	0	0	*			
RRC H	CB 0C	2	*	*	0	0	*			
RRC L	CB 0D	2	*	*	0	0	*			
RRCA	0F	1	x	x	0	0	*			
RST 00H	C7	3	x	x	x	x	x			
RST 08H	CF	3	x	x	x	x	x			
RST 10H	D7	3	x	x	x	x	x			
RST 18H	DF	3	x	x	x	x	x			
RST 20H	E7	3	x	x	x	x	x			
RST 28H	EF	3	x	x	x	x	x			
RST 30H	F7	3	x	x	x	x	x			
RST 38H	FF	3	x	x	x	x	x			
SBC A,C	99	1	*	*	*	1	*			
SBC A,n	DE nn	2	*	*	*	1	*			
SCF	37	1	x	x	0	0	1			
SET 0,(HL)	CB C6	3	x	x	x	x	x			
SET 0,A	CB C7	2	x	x	x	x	x			
SET 0,B	CB C0	2	x	x	x	x	x			
SET 0,C	CB C1	2	x	x	x	x	x			
SET 0,D	CB C2	2	x	x	x	x	x			
SET 0,E	CB C3	2	x	x	x	x	x			
SET 0,H	CB C4	2	x	x	x	x	x			
SET 0,L	CB C5	2	x	x	x	x	x			
SET 1,(HL)	CB CE	3	x	x	x	x	x			
SET 1,A	CB CF	2	x	x	x	x	x			
SET 1,B	CB C8	2	x	x	x	x	x			
SET 1,C	CB C9	2	x	x	x	x	x			
SET 1,D	CB CA	2	x	x	x	x	x			
SET 1,E	CB CB	2	x	x	x	x	x			
SET 1,H	CB CC	2	x	x	x	x	x			
SET 1,L	CB CD	2	x	x	x	x	x			
SET 2,(HL)	CB D6	3	x	x	x	x	x			
SET 2,A	CB D7	2	x	x	x	x	x			
SET 2,B	CB D0	2	x	x	x	x	x			
SET 2,C	CB D1	2	x	x	x	x	x			
SET 2,D	CB D2	2	x	x	x	x	x			
SET 2,E	CB D3	2	x	x	x	x	x			
SET 2,H	CB D4	2	x	x	x	x	x			
SET 2,L	CB D5	2	x	x	x	x	x			
SET 3,(HL)	CB DE	3	x	x	x	x	x			
SET 3,A	CB DF	2	x	x	x	x	x			
SET 3,B	CB D8	2	x	x	x	x	x			
SET 3,C	CB D9	2	x	x	x	x	x			
SET 3,D	CB DA	2	x	x	x	x	x			
SET 3,E	CB DB	2	x	x	x	x	x			
SET 3,H	CB DC	2	x	x	x	x	x			
SET 3,L	CB DD	2	x	x	x	x	x			
SET 4,(HL)	CB E6	3	x	x	x	x	x			
SET 4,A	CB E7	2	x	x	x	x	x			
SET 4,B	CB E0	2	x	x	x	x	x			
SET 4,C	CB E1	2	x	x	x	x	x			
SET 4,D	CB E2	2	x	x	x	x	x			
SET 4,E	CB E3	2	x	x	x	x	x			
SET 4,H	CB E4	2	x	x	x	x	x			
SET 4,L	CB E5	2	x	x	x	x	x			
SET 5,(HL)	CB EE	3	x	x	x	x	x			
SET 5,A	CB EF	2	x	x	x	x	x			
SET 5,B	CB E8	2	x	x	x	x	x			
SET 5,C	CB E9	2	x	x	x	x	x			
SET 5,D	CB EA	2	x	x	x	x	x			
SET 5,E	CB EB	2	x	x	x	x	x			
SET 5,H	CB EC	2	x	x	x	x	x			
SET 5,L	CB ED	2	x	x	x	x	x			
SET 6,(HL)	CB F6	3	x	x	x	x	x			

INSTR.	HEX CODE	CYC	FREG - Flags register							
			b7	b6	b5	b4	b3	b2	b1	b0
			S	Z	H	N	C			
SET 6,A	CB F7	2	x	x	x	x	x			
SET 6,B	CB F0	2	x	x	x	x	x			
SET 6,C	CB F1	2	x	x	x	x	x			
SET 6,D	CB F2	2	x	x	x	x	x			
SET 6,E	CB F3	2	x	x	x	x	x			
SET 6,H	CB F4	2	x	x	x	x	x			
SET 6,L	CB F5	2	x	x	x	x	x			
SET 7,(HL)	CB FE	3	x	x	x	x	x			
SET 7,A	CB FF	2	x	x	x	x	x			
SET 7,B	CB F8	2	x	x	x	x	x			
SET 7,C	CB F9	2	x	x	x	x	x			
SET 7,D	CB FA	2	x	x	x	x	x			
SET 7,E	CB FB	2	x	x	x	x	x			
SET 7,H	CB FC	2	x	x	x	x	x			
SET 7,L	CB FD	2	x	x	x	x	x			
SLL (HL)	CB 26	3	*	*	0	0	*			
SLL A	CB 27	2	*	*	0	0	*			
SLL B	CB 20	2	*	*	0	0	*			
SLL C	CB 21	2	*	*	0	0	*			
SLL D	CB 22	2	*	*	0	0	*			
SLL E	CB 23	2	*	*	0	0	*			
SLL H	CB 24	2	*	*	0	0	*			
SLL L	CB 25	2	*	*	0	0	*			
SRA (HL)	CB 3E	3	*	*	0	0	*			
SRA A	CB 3F	2	*	*	0	0	*			
SRA B	CB 38	2	*	*	0	0	*			
SRA C	CB 39	2	*	*	0	0	*			
SRA D	CB 3A	2	*	*	0	0	*			
SRA E	CB 3B	2	*	*	0	0	*			
SRA H	CB 3C	2	*	*	0	0	*			
SRA L	CB 3D	2	*	*	0	0	*			
SRL (HL)	CB 2E	3	*	*	0	0	*			
SRL A	CB 2F	2	*	*	0	0	*			
SRL B	CB 28	2	*	*	0	0	*			
SRL C	CB 29	2	*	*	0	0	*			
SRL D	CB 2A	2	*	*	0	0	*			
SRL E	CB 2B	2	*	*	0	0	*			
SRL H	CB 2C	2	*	*	0	0	*			
SRL L	CB 2D	2	*	*	0	0	*			
SUB A,(HL)	96	2	*	*	*	1	*			
SUB A,A	97	1	*	*	*	1	*			
SUB A,B	90	1	*	*	*	1	*			
SUB A,C	91	1	*	*	*	1	*			
SUB A,D	92	1	*	*	*	1	*			
SUB A,E	93	1	*	*	*	1	*			
SUB A,H	94	1	*	*	*	1	*			
SUB A,L	95	1	*	*	*	1	*			
SUB n	D6 nn	2	*	*	*	1	*			
XOR (HL)	AE	2	*	*	0	0	0			
XOR A	AF	1	*	*	0	0	0			
XOR B	A8	1	*	*	0	0	0			
XOR C	A9	1	*	*	0	0	0			
XOR D	AA	1	*	*	0	0	0			
XOR E	AB	1	*	*	0	0	0			
XOR H	AC	1	*	*	0	0	0			
XOR L	AD	1	*	*	0	0	0			
XOR n	EE nn	2	*	*	0	0	0			

Z80 INSTRUCTION SET

Conditional jumps show 2 values: e.g. "RET Z = 1/3" (cycles if condition not met/(condition met))

FLAG * = affected
DEF's ? = unknown
x = no change

INSTR.	HEX CODE	CYC	FREG - Flags register							
			b7	b6	b5	b4	b3	b2	b1	b0
			S	Z	H	N	C			
ADC A,C	89	1	*	*	*	0	*			
ADC A,n	CE nn	2	*	*	*	0	*			
ADD A,(HL)	86	2	*	*	*	0	*			
ADD A,A	87	1	*	*	*	0	*			
ADD A,B	80	1	*	*	*	0	*			
ADD A,C	81	1	*	*	*	0	*			
ADD A,D	82	1	*	*	*	0	*			
ADD A,E	83	1	*	*	*	0	*			
ADD A,H	84	1	*	*	*	0	*			
ADD A,L	85	1	*	*	*	0	*			
ADD A,n	C6 nn	2	*	*	*	0	*			
ADD HL,BC	09	3	x	x	x	0	*			
ADD HL,DE	19	3	x	x	x	0	*			
ADD HL,HL	29	3	x	x	x	0	*			
AND (HL)	A6	2	*	*	1	0	0			
AND A	A7	1	*	*	1	0	0			
AND B	A0	1	*	*	1	0	0			
AND C	A1	1	*	*	1	0	0			
AND D	A2	1	*	*	1	0	0			
AND E	A3	1	*	*	1	0	0			
AND H	A4	1	*	*	1	0	0			
AND L	A5	1	*	*	1	0	0			
AND n	E6 nn	2	*	*	1	0	0			
BIT 0,(HL)	CB 46	3	?	*	1	0	x			
BIT 0,A	CB 47	2	?	*	1	0	x			
BIT 0,B	CB 40	2	?	*	1	0	x			
BIT 0,C	CB 41	2	?	*	1	0	x			
BIT 0,D	CB 42	2	?	*	1	0	x			
BIT 0,E	CB 43	2	?	*	1	0	x			
BIT 0,H	CB 44	2	?	*	1	0	x			
BIT 0,L	CB 45	2	?	*	1	0	x			
BIT 1,(HL)	CB 4E	3	?	*	1	0	x			
BIT 1,A	CB 4F	2	?	*	1	0	x			
BIT 1,B	CB 48	2	?	*	1	0	x			
BIT 1,C	CB 49	2	?	*	1	0	x			
BIT 1,D	CB 4A	2	?	*	1	0	x			
BIT 1,E	CB 4B	2	?	*	1	0	x			
BIT 1,H	CB 4C	2	?	*	1	0	x			
BIT 1,L	CB 4D	2	?	*	1	0	x			
BIT 2,(HL)	CB 56	3	?	*	1	0	x			
BIT 2,A	CB 57	2	?	*	1	0	x			
BIT 2,B	CB 50	2	?	*	1	0	x			
BIT 2,C	CB 51	2	?	*	1	0	x			
BIT 2,D	CB 52	2	?	*	1	0	x			
BIT 2,E	CB 53	2	?	*	1	0	x			
BIT 2,H	CB 54	2	?	*	1	0	x			
BIT 2,L	CB 55	2	?	*	1	0	x			
BIT 3,(HL)	CB 5E	3	?	*	1	0	x			
BIT 3,A	CB 5F	2	?	*	1	0	x			
BIT 3,B	CB 58	2	?	*	1	0	x			
BIT 3,C	CB 59	2	?	*	1	0	x			
BIT 3,D	CB 5A	2	?	*	1	0	x			
BIT 3,E	CB 5B	2	?	*	1	0	x			
BIT 3,H	CB 5C	2	?	*	1	0	x			
BIT 3,L	CB 5D	2	?	*	1	0	x			
BIT 4,(HL)	CB 66	3	?	*	1	0	x			
BIT 4,A	CB 67	2	?	*	1	0	x			
BIT 4,B	CB 60	2	?	*	1	0	x			
BIT 4,C	CB 61	2	?	*	1	0	x			

INSTR.	HEX CODE	CYC	FREG - Flags register							
			b7	b6	b5	b4	b3	b2	b1	b0
			S	Z	H	N	C			
BIT 4,D	CB 62	2	?	*	1	0	x			
BIT 4,E	CB 63	2	?	*	1	0	x			
BIT 4,H	CB 64	2	?	*	1	0	x			
BIT 4,L	CB 65	2	?	*	1	0	x			
BIT 5,(HL)	CB 6E	3	?	*	1	0	x			
BIT 5,A	CB 6F	2	?	*	1	0	x			
BIT 5,B	CB 68	2	?	*	1	0	x			
BIT 5,C	CB 69	2	?	*	1	0	x			
BIT 5,D	CB 6A	2	?	*	1	0	x			
BIT 5,E	CB 6B	2	?	*	1	0	x			
BIT 5,H	CB 6C	2	?	*	1	0	x			
BIT 5,L	CB 6D	2	?	*	1	0	x			
BIT 6,(HL)	CB 76	3	?	*	1	0	x			
BIT 6,A	CB 77	2	?	*	1	0	x			
BIT 6,B	CB 70	2	?	*	1	0	x			
BIT 6,C	CB 71	2	?	*	1	0	x			
BIT 6,D	CB 72	2	?	*	1	0	x			
BIT 6,E	CB 73	2	?	*	1	0	x			
BIT 6,H	CB 74	2	?	*	1	0	x			
BIT 6,L	CB 75	2	?	*	1	0	x			
BIT 7,(HL)	CB 7E	3	?	*	1	0	x			
BIT 7,A	CB 7F	2	?	*	1	0	x			
BIT 7,B	CB 78	2	?	*	1	0	x			
BIT 7,C	CB 79	2	?	*	1	0	x			
BIT 7,D	CB 7A	2	?	*	1	0	x			
BIT 7,E	CB 7B	2	?	*	1	0	x			
BIT 7,H	CB 7C	2	?	*	1	0	x			
BIT 7,L	CB 7D	2	?	*	1	0	x			
CALL C,mn	DC nn mm	3/5	x	x	x	x	x			
CALL mn	CD nn mm	5	x	x	x	x	x			
CALL N,mn	FC nn mm	3/5	x	x	x	x	x			
CALL NC,mn	D4 nn mm	3/5	x	x	x	x	x			
CALL NZ,mn	C4 nn mm	3/5	x	x	x	x	x			
CALL P,mn	F4 nn mm	3/5	x	x	x	x	x			
CALL PE,mn	EC nn mm	3/5	x	x	x	x	x			
CALL PO,mn	E4 nn mm	3/5	x	x						