

## EKLER

### EK-1

#### PIC Assembly İle Analog Sayısal Devresi Program Kodu:

```
SIFIR EQUU H"3F"
BİR EQUU H"06"
İKİ EQUU H"5B"
ÜÇ EQUU H"4F"
DÖRT EQUU H"66"
BEŞ EQUU H"6D"
ALTI EQUU H"7D"
YEDİ EQUU H"07"
SEKİZ EQUU H"7F"
DOKUZ EQUU H"6F"
:-----
DEGER EQUU H"0020"
DEGERH EQUU H"0021"
DEGERL EQUU H"0022"
DEGER3 EQUU H"0023"
SAYI1 EQUU H"0024"
SAYI2 EQUU H"0025"
SAYI3 EQUU H"0026"
SAYI4 EQUU H"0027"
D1 EQUU H"0028"
D2 EQUU H"0029"
D3 EQUU H"002A"
D4 EQUU H"002B"
KÜÇÜK_OLAN EQUU H"002C"
BÜYÜK_OLAN EQUU H"002D"
TEMP EQUU H"002E"
BEKLEM EQUU H"002F"
TOPLA1 EQUU H"0034"
TOPLA2 EQUU H"0035"
TOPLA3 EQUU H"0036"
:-----
ORG 00H
GOTO START
:-----
START
CLEARF PORTA
CLEARF PORTB
CLEARF PORTC
CLEARF PORTD
CLEARF DEGER
CLEARF DEGERH
CLEARF DEGERL
CLEARF DEGER3
CLEARF SAYI1
CLEARF SAYI2
CLEARF SAYI3
CLEARF SAYI4
CLEARF D1
CLEARF D2
CLEARF D3
CLEARF D4
CLEARF KÜÇÜK_OLAN
CLEARF BÜYÜK_OLAN
CLEARF TEMP
CLEARF BEKLEM
MOVE_LW B"01000001"
MOVE_WF ADCON0
BSF STATUS,RP0
MOVE_LW B"11111111"
MOVE_WF TRISA^80H
CLEARF TRISB^80H
CLEARF TRISC^80H
CLEARF TRISD^80H
CLEARF TRISE^80H
MOVE_LW B"10001111"
MOVE_WF ADCON1
MOVE_LW H"00"
MOVE_WF CMCON
MOVE_LW B"10000111"
MOVE_WF OPTION_REG
BCF STATUS,RP0
GOTO ANA
:-----
ADC
MOVE_LW ,250
MOVE_WF TEMP
ADBEKLE
DECFSZ TEMP,F
GOTO ADBEKLE
MOVE_LW ,250
MOVE_WF TEMP
ADBEK2
DECFSZ TEMP,F
GOTO ADBEK2
BSF ADCON0,GO :Analog-
Sayısal Dönüşüme Başla
TARA
BTFSC ADCON0,GO
GOTO TARA
BSF STATUS,RP0
MOVE_F ADRESL,W
BCF STATUS,RP0
MOVE_WF DEGERL
MOVE_F ADRESH,W
MOVE_WF DEGERH
RETURN
:-----
KODLA
ADDWF PCL,1
RETLW SIFIR
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RETLW BİR
RETLW İKİ
RETLW ÜÇ
RETLW DÖRT
RETLW BEŞ
RETLW ALTI
RETLW YEDİ
RETLW SEKİZ
RETLW DOKUZ
:-----
BEKLE
    MOVE_LW    ,10

D11    MOVE_WF    BÜYÜK_OLAN
    MOVE_LW    ,150
    MOVE_WF    KÜÇÜK_OLAN

D22    DECFSZ    KÜÇÜK_OLAN,F
    GOTO D22
    DECFSZ    BÜYÜK_OLAN,F
    GOTO D11
    RETURN

:-----
HESAP
    MOVE_LW    ,0
    MOVE_WF    SAYI1
    MOVE_WF    SAYI2
    MOVE_WF    SAYI3
    MOVE_WF    SAYI4

HES
    MOVE_LW    ,100
    SUBWFDEGER,W
    BTFSS STATUS,C
    GOTO HES1
    MOVE_LW    ,100
    SUBWFDEGER,F
    INCF SAYI2,F
    GOTO HES

HES1
    MOVE_LW    ,10
    SUBWFDEGER,W
    BTFSS STATUS,C
    GOTO HES2
    MOVE_LW    ,10
    SUBWFDEGER,F
    INCF SAYI3,F
    GOTO HES1

HES2
    MOVE_LW    ,1
    SUBWFDEGER,W
    BTFSS STATUS,C
    GOTO HESSON
    MOVE_LW    ,1
    SUBWFDEGER,F
    INCF SAYI4,F
    GOTO HES2

HESSON

RETURN
:-----
ANA
    CALL ADC
    MOVE_F     DEGERL,W
    MOVE_WF    DEGER
    CALL HESAP
    CALL HESAP2
    MOVE_F     SAYI1,W
    MOVE_WF    D1
    MOVE_F     SAYI2,W
    MOVE_WF    D2
    MOVE_F     SAYI3,W
    MOVE_WF    D3
    MOVE_F     SAYI4,W
    MOVE_WF    D4
    CALL DISPTARA
    MOVE_F     DEGERL,W
    MOVE_WF    PORTB
    MOVE_F     DEGERH,W
    MOVE_WF    PORTE
    GOTO ANA

:-----
DISPTARA
    BSF PORTC,0
    BSF PORTC,1
    BSF PORTC,2
    BSF PORTC,3
    MOVE_LW    ,0
    SUBWFD1,W
    BTFSS STATUS,Z
    GOTO DIS0
    GOTO TEST1

DIS0
    BSF PORTC,1
    BSF PORTC,2
    BSF PORTC,3
    BCF PORTC,0
    MOVE_F     D1,W
    CALL KODLA
    MOVE_WF    PORTD
    CALL BEKLE
    BSF PORTC,0
    GOTO DIS1

:-----
TEST1
    MOVE_LW    ,0
    SUBWFD2,W
    BTFSS STATUS,Z
    GOTO DIS1
    GOTO TEST2

DIS1
    BSF PORTC,2
    BSF PORTC,3
    BCF PORTC,1
    MOVE_F     D2,W
    CALL KODLA
    MOVE_WF    PORTD

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CALL BEKLE
BSF PORTC,1
GOTO DIS2
:-----
TEST2
MOVE_LW    ,0
SUBWFD3,W
BTFSS STATUS,Z
GOTO DIS2
GOTO DIS3
DIS2
BSF PORTC,0
BSF PORTC,3
BCF PORTC,2
MOVE_F D3,W
CALL KODLA
MOVE_WF PORTD
CALL BEKLE
BSF PORTC,2
GOTO DIS3
:-----
DIS3
BSF PORTC,0
BSF PORTC,1
BCF PORTC,3
MOVE_F D4,W
CALL KODLA
MOVE_WF PORTD
CALL BEKLE
BSF PORTC,3
:-----
RETURN
HESAP2
MOVE_LW    ,0
SUBWFDEGERH,W
BTFSC STATUS,Z
RETURN
BTFSC DEGERH,0
GOTO YAZ256
DEVAM
BTFSC DEGERH,1
GOTO YAZ512
RETURN
SONUC

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MOVE_LW    ,10
SUBWFSAYI4,W
BTFSC STATUS,C
CALL BUYUK
MOVE_LW    ,10
SUBWFSAYI3,W
BTFSC STATUS,C
CALL BUYUK1
MOVE_LW    ,10
SUBWFSAYI2,W
BTFSC STATUS,C
CALL BUYUK2
RETURN
BUYUK
MOVE_WF    SAYI4
INCF SAYI3,F
RETURN
BUYUK1
MOVE_WF    SAYI3
INCF SAYI2,F
RETURN
BUYUK2
MOVE_WF    SAYI2
INCF SAYI1,F
RETURN
YAZ256
MOVE_LW    ,2
ADDWF     SAYI2,F
MOVE_LW    ,5
ADDWF     SAYI3,F
MOVE_LW    ,6
ADDWF     SAYI4,F
CALL SONUC
GOTO DEVAM
YAZ512
MOVE_LW    ,5
ADDWF     SAYI2,F
MOVE_LW    ,1
ADDWF     SAYI3,F
MOVE_LW    ,2
ADDWF     SAYI4,F
CALL SONUC
RETURN
END

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## EK-2

### Analog Sayısal Devresi Makine Kodu:

:020000040000FA  
:1000000001288501860187018801A001A101A201C3  
:10001000A301A401A501A601A701A801A901AA01A4  
:10002000AB01AC01AD01AE01AF0141309F008316C1  
:10003000FF30850086018701880189018F309F008C  
:1000400000309C008730810083126A28FA30AE00AD  
:10005000AE0B2828FA30AE00AE0B2C281F151F1946  
:100060002F2883161E088312A2001E08A100080074  
:1000700082073F3406345B344F3466346D347D344C  
:1000800007347F346F340A30AD009630AC00AC0BCF  
:100090004728AD0B452808000030A400A500A600A5  
:1000A000A70064302002031C59286430A002A50A6E  
:1000B00051280A302002031C61280A30A002A60A37  
:1000C000592801302002031C69280130A002A70A28  
:1000D0006128080026202208A0004C20B520240812  
:1000E000A8002508A9002608AA002708AB007D2043  
:1000F00022088600210889006A280714871407153A  
:10010000871500302802031D8628902887140715BC  
:1001100087150710280838208800432007149528E1  
:1001200000302902031D95289E2807158715871082  
:1001300029083820880043208714A32800302A0289  
:10014000031DA328AC280714871507112A08382097  
:10015000880043200715AC280714871487112B0843  
:100160003820880043208715080000302102031939  
:1001700008002118D428A118DC2808000A3027021A  
:100180000318CB200A3026020318CE200A3025029D  
:100190000318D1200800A700A60A0800A600A50A97  
:1001A0000800A500A40A08000230A5070530A6072C  
:1001B0000630A707BE20BB280530A5070130A607DB  
:0801C0000230A707BE20080071  
:02400E00323F3F  
:00000001FF

### EK-3

#### PLC Cihazında Kullanılan Program Kodu:

LT0.00	KEEP(11) hR1.04	anD hR57.01
LDNOT 0.00	LT1.05	CMP(20) hR55 DM2
KEEP(11) hR0.00	LDNOT 1.05	LTP_LT
LT0.01	KEEP(11) hR1.05	oR P_EQ
LDNOT 0.01	LT1.06	anDLD
KEEP(11) hR0.01	LDNOT 1.06	ouT hR70.01
LT0.02	KEEP(11) hR1.06	LTP_On
LDNOT 0.02	LT1.07	ouT TR0
KEEP(11) hR0.02	LDNOT 1.07	CMP(20) hR55 DM2
LT0.03		LTP_GT
LDNOT 0.03	ouT hR50.00	oR P_EQ
KEEP(11) hR0.03	LTTR0	anDLD
LT0.04	anD P_LT	ouT hR57.02
LDNOT 0.04	ouT hR50.01	LTTR0
KEEP(11) hR0.04	LTTR0	anD hR57.02
LT0.05	anD P_EQ	CMP(20) hR55 DM3
LDNOT 0.05	ouT hR50.02	LTP_LT
KEEP(11) hR0.05	lThR50.02	oR P_EQ
LT0.06	MOV(21) &0 hR55	anDLD
LDNOT 0.06	MOV(21) &0 hR56	ouT hR70.02
KEEP(11) hR0.06	lThR50.00	LTP_On
LT0.07	SBB(51) hR1 hR0 hR55	ouT TR0
LDNOT 0.07	LTP_On	CMP(20) hR55 DM3
KEEP(11) hR0.07	ouT TR0	LTP_GT
LT0.08	CMP(20) hR55 DM0	oR P_EQ
LDNOT 0.08	LTP_GT	anDLD
KEEP(11) hR0.08	oR P_EQ	ouT hR57.03
LT0.09	anDLD	LTTR0
LDNOT 0.09	ouT hR57.00	anD hR57.03
KEEP(11) hR0.09	LTTR0	CMP(20) hR55 DM4
LT1.00	anD hR57.00	LTP_LT
LDNOT 1.00	CMP(20) hR55 DM1	oR P_EQ
KEEP(11) hR1.00	LTP_LT	anDLD
LT1.01	oR P_EQ	ouT hR70.03
LDNOT 1.01	anDLD	LTP_On
KEEP(11) hR1.01	ouT hR70.00	ouT TR0
LT1.02	LTP_On	CMP(20) hR55 DM4
LDNOT 1.02	ouT TR0	LTP_GT
KEEP(11) hR1.02	CMP(20) hR55 DM1	oR P_EQ
LT1.03	LTP_GT	anDLD
LDNOT 1.03	oR P_EQ	ouT hR57.04
KEEP(11) hR1.03	anDLD	LTTR0
LT1.04	ouT hR57.01	anD hR57.04
LDNOT 1.04	LTTR0	CMP(20) hR55 DM5

LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.04  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM5  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.05  
LTTR0  
anD hR57.05  
CMP(20) hR55 DM6  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.05  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM6  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.06  
LTTR0  
anD hR57.06  
CMP(20) hR55 DM7  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.06  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM7  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.07  
LTTR0  
anD hR57.07  
CMP(20) hR55 DM8  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.07  
LTP\_On  
ouT TR0

CMP(20) hR55 DM8  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.08  
LTTR0  
anD hR57.08  
CMP(20) hR55 DM9  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.08  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM9  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.09  
LTTR0  
anD hR57.09  
CMP(20) hR55 DM10  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.09  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM10  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.10  
LTTR0  
anD hR57.10  
CMP(20) hR55 DM11  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.10  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM11  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.11  
LTTR0

anD hR57.11  
CMP(20) hR55 DM12  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.11  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM12  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.12  
LTTR0  
anD hR57.12  
CMP(20) hR55 DM13  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.12  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM13  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.13  
LTTR0  
anD hR57.13  
CMP(20) hR55 DM14  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.13  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM14  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.14  
LTTR0  
anD hR57.14  
CMP(20) hR55 DM15  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.14

LTP\_On  
ouT TR0  
CMP(20) hR55 DM15  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR57.15  
LTTR0  
anD hR57.15  
CMP(20) hR55 DM16  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR70.15  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM16  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.00  
LTTR0  
anD hR58.00  
CMP(20) hR55 DM17  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.00  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM17  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.01  
LTTR0  
anD hR58.01  
CMP(20) hR55 DM18  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.01  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM18  
LTP\_GT  
oR P\_EQ  
anDLD

ouT hR58.02  
LTTR0  
anD hR58.02  
CMP(20) hR55 DM19  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.02  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM19  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.03  
LTTR0  
anD hR58.03  
CMP(20) hR55 DM20  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.03  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM20  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.04  
LTTR0  
anD hR58.04  
CMP(20) hR55 DM21  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.04  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM21  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.05  
LTTR0  
anD hR58.05  
CMP(20) hR55 DM22  
LTP\_LT  
oR P\_EQ

anDLD  
ouT hR71.05  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM22  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.06  
LTTR0  
anD hR58.06  
CMP(20) hR55 DM23  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.06  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM23  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.07  
LTTR0  
anD hR58.07  
CMP(20) hR55 DM24  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.07  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM24  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.08  
LTTR0  
anD hR58.08  
CMP(20) hR55 DM25  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.08  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM25  
LTP\_GT

oR P\_EQ  
anDLD  
ouT hR58.09  
LTTR0  
anD hR58.09  
CMP(20) hR55 DM26  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.09  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM26  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.10  
LTTR0  
anD hR58.10  
CMP(20) hR55 DM27  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.10  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM27  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.11  
LTTR0  
anD hR58.11  
CMP(20) hR55 DM28  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.11  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM28  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.12  
LTTR0  
anD hR58.12  
CMP(20) hR55 DM29

LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.12  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM29  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.13  
LTTR0  
anD hR58.13  
CMP(20) hR55 DM30  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.13  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM30  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.14  
LTTR0  
anD hR58.14  
CMP(20) hR55 DM31  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.14  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM31  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR58.15  
LTTR0  
anD hR58.15  
CMP(20) hR55 DM32  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR71.15  
LTP\_On  
ouT TR0

CMP(20) hR55 DM32  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR59.00  
LTTR0  
anD hR59.00  
CMP(20) hR55 DM33  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR72.00  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM33  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR59.01  
LTTR0  
anD hR59.01  
CMP(20) hR55 DM34  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR72.01  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM34  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR59.02  
LTTR0  
anD hR59.02  
CMP(20) hR55 DM35  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR72.02  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM35  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR59.03  
LTTR0

anD hR59.03  
CMP(20) hR55 DM36  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR72.03  
LTP\_On  
ouT TR0  
CMP(20) hR55 DM36  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR59.04  
LTTR0  
anD hR59.04  
CMP(20) hR55 DM37  
LTP\_LT  
oR P\_EQ  
anDLD  
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CMP(20) hR56 DM18  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR64.10  
LTTR0  
anD hR64.10  
CMP(20) hR56 DM19  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR76.12  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM17  
LTP\_GT

oR P\_EQ  
anDLD  
ouT hR64.11  
LTTR0  
anD hR64.11  
CMP(20) hR56 DM18  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR76.13  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM16  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR64.12  
LTTR0  
anD hR64.12  
CMP(20) hR56 DM17  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR76.14  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM15  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR64.13  
LTTR0  
anD hR64.13  
CMP(20) hR56 DM16  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR76.15  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM14  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR64.14  
LTTR0  
anD hR64.14  
CMP(20) hR56 DM15

LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.00  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM13  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR64.15  
LTTR0  
anD hR64.15  
CMP(20) hR56 DM14  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.01  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM12  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR65.00  
LTTR0  
anD hR65.00  
CMP(20) hR56 DM13  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.02  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM11  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR65.01  
LTTR0  
anD hR65.01  
CMP(20) hR56 DM12  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.03  
LTP\_On  
ouT TR0

CMP(20) hR56 DM10  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR65.02  
LTTR0  
anD hR65.02  
CMP(20) hR56 DM11  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.04  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM9  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR65.03  
LTTR0  
anD hR65.03  
CMP(20) hR56 DM10  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.05  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM8  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR65.04  
LTTR0  
anD hR65.04  
CMP(20) hR56 DM9  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.06  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM7  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR65.05  
LTTR0

anD hR65.05  
CMP(20) hR56 DM8  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.07  
LTP\_On  
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CMP(20) hR56 DM6  
LTP\_GT  
oR P\_EQ  
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ouT hR65.06  
LTTR0  
anD hR65.06  
CMP(20) hR56 DM7  
LTP\_LT  
oR P\_EQ  
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ouT hR77.08  
LTP\_On  
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CMP(20) hR56 DM5  
LTP\_GT  
oR P\_EQ  
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ouT hR65.07  
LTTR0  
anD hR65.07  
CMP(20) hR56 DM6  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.09  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM4  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR65.08  
LTTR0  
anD hR65.08  
CMP(20) hR56 DM5  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.10

LTP\_On  
ouT TR0  
CMP(20) hR56 DM3  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR65.09  
LTTR0  
anD hR65.09  
CMP(20) hR56 DM4  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.11  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM2  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR65.10  
LTTR0  
anD hR65.10  
CMP(20) hR56 DM3  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.12  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM1  
LTP\_GT  
oR P\_EQ  
anDLD  
ouT hR65.11  
LTTR0  
anD hR65.11  
CMP(20) hR56 DM2  
LTP\_LT  
oR P\_EQ  
anDLD  
ouT hR77.13  
LTP\_On  
ouT TR0  
CMP(20) hR56 DM0  
LTP\_GT  
oR P\_EQ  
anDLD

ouT hR65.12  
LTTR0  
anD hR65.12  
CMP(20) hR56 DM1  
LTP\_LT  
oR P\_EQ  
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lThR70.00  
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oR hR70.04  
oR hR70.06  
oR hR70.08  
oR hR70.10  
oR hR70.13  
oR hR70.14  
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oR hR71.02  
oR hR71.04  
oR hR71.05  
oR hR71.07  
oR hR71.09  
oR hR71.12  
oR hR71.13  
oR hR71.15  
oR hR72.01  
oR hR72.04  
oR hR72.06  
oR hR72.08  
oR hR72.10  
oR hR72.13  
oR hR72.14  
oR hR73.01  
oR hR73.02  
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oR hR73.06  
oR hR73.08  
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oR hR73.12  
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anDNOT hR78.00  
ouT 100.00  
lThR77.14  
oR hR77.12  
oR hR77.10  
oR hR77.08  
oR hR77.06  
oR hR77.04

oR hR77.01	oR hR72.15	oR hR70.06
oR hR77.00	oR hR73.00	oR hR70.11
oR hR76.13	oR hR73.01	oR hR70.13
oR hR76.12	oR hR73.02	oR hR70.15
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oR hR76.09	oR hR73.06	oR hR71.03
oR hR76.07	oR hR73.09	oR hR71.04
oR hR76.05	oR hR73.10	oR hR71.06
oR hR76.02	oR hR73.13	oR hR71.07
oR hR76.01	oR hR73.14	oR hR71.11
oR hR75.15	anDNOT hR78.01	oR hR71.13
oR hR75.13	ouT 100.01	oR hR71.14
oR hR75.10	lThR77.13	oR hR71.15
oR hR75.08	oR hR77.12	oR hR72.03
oR hR75.06	oR hR77.09	oR hR72.04
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oR hR75.01	oR hR77.05	oR hR72.06
oR hR75.00	oR hR77.04	oR hR72.11
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oR hR74.02	oR hR76.07	oR hR73.06
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ouT hR78.00	oR hR76.02	oR hR73.12
lThR70.01	oR hR76.00	oR hR73.13
oR hR70.02	oR hR75.15	oR hR73.14
oR hR70.06	oR hR75.12	anDNOT hR78.02
oR hR70.09	oR hR75.09	ouT 100.02
oR hR70.10	oR hR75.08	lThR77.11
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oR hR71.02	oR hR74.14	oR hR77.03
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oR hR71.06	oR hR74.12	oR hR76.15
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oR hR71.12	oR hR74.05	oR hR76.10
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oR hR72.02	oR hR74.00	oR hR76.03
oR hR72.05	ouT hR78.01	oR hR76.01
oR hR72.06	lThR70.03	oR hR76.00
oR hR72.09	oR hR70.04	oR hR75.15
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ouT hR78.05  
enD