Maximum Value

Given variables A and B, each holding an 8-bit signed 2's complement number. Write a program to find the maximum value and put into variable C. Example if A > B then C = A.

C = Max(A,B)

Option C: If-then-else statement restructured to if-then with guess. Result immediately stored in SRAM.

Simulation of the unsigned problem C = Max(32,16), where the answer should equal 32 (0x20).

```
reset:
    ;Initialize SRM Variables
    clr    r16
    sts    A, r16
    sts    B, r16
    sts    C, r16
loop:
    ; Test Max3
    ldi    r16, 0x20
    sts    A, r16
=>  ldi    r16, 0x10
    sts    B, r16
    rcall Max3
    rjmp  loop
```

Watch			
Name	Value	Type	Location
A	32 ' '	SRAM Location	0x0100 [SR
B	0 ''	SRAM Location	0x0101 [SR
C	0 ''	SRAM Location	0x0102 [SR

Watch 1 / Watch 2 / Watch 3 / Watch 4

Figure 1: Start of Maximum program with variable A initialized to 0x20 (32_{10})

```
reset:
    ;Initialize SRM Variables
    clr    r16
    sts    A, r16
    sts    B, r16
    sts    C, r16
loop:
    ; Test Max3
    ldi    r16, 0x20
    sts    A, r16
    ldi    r16, 0x10
    sts    B, r16
=>  rcall Max3
    rjmp  loop
```

Watch			
Name	Value	Type	Location
A	32 ' '	SRAM Location	0x0100 [SR
B	16 '+'	SRAM Location	0x0101 [SR
C	0 ''	SRAM Location	0x0102 [SR

Watch 1 / Watch 2 / Watch 3 / Watch 4

Figure 2: variable B is initialized to 0x10 (16_{10})

```
reset:
    ;Initialize SRM Variables
    clr    r16
    sts    A, r16
    sts    B, r16
    sts    C, r16
loop:
    ; Test Max3
    ldi    r16, 0x20
    sts    A, r16
    ldi    r16, 0x10
    sts    B, r16
    rcall Max3
=>  rjmp  loop
```

Watch			
Name	Value	Type	Location
A	32 ' '	SRAM Location	0x0100 [SR
B	16 '+'	SRAM Location	0x0101 [SR
C	32 ' '	SRAM Location	0x0102 [SR

Watch 1 / Watch 2 / Watch 3 / Watch 4

Figure 3: End of Maximum program with variable C containing 0x20 (32_{10})