

```

????
b[for]d]anp =
b+
c; d =
b[mp; d =
t[mp; e =
b+
c*
2; f =
(b[mp*
3)*
3;
MI
MaxLen
Opc ←
MI
Opc ∈
{GMEMCPY, GMEMMOVE, GMEMSET}
Dst
Src
Len
MI
DstAlign
SrcAlign
Len
Len =
0
MI
IsVolatile ←
Opc =
GMEMCPY
IsVolatile
or
MaxLen >
0
and
Len >
MaxLen
Opc =
GMEMCPY
Opc =
GMEMMOVE
Opc =
GMEMSET
????
b[for]e]

add(zext x, zext y)

```

$op(ext\ x, ext\ y) \Rightarrow ext(op(x, y))$

```

t]classepo_base <
Instructionopcode, InstructionextOpcode >:
GICombineRule <
(defroot :
ext1, ExtMI, (extOpcode
src2), (opcode
ext1, root, [returnmatchEPO(*
dst,
src2);]), (apply[applyEPO(*
ExtMI - >
getOpcode() ==
TargetOpcode ::
GSEXT,
src1,

con1b[for]MOVZGLGR20x0; MOVIGLGR20x1;
[-215, 215 -
1]
con2b[for]MOVCLGLGR20xFFBF; MOVIGLGR20xF123;
C
C = 2n ± 1

```

- (1) $C = (2^n \pm 1) \times 2^m$
- (2)

- (3) $x \times (2^n + 1) = (x \ll n) + x$

- (4) $x \times (2^n - 1) = (x \ll n) - x$