```
a = {}
set a after adding 5 = {5}
set a after adding 5 = {5}
set a after adding 0 and 63 = {0,5,63}
set b = {1,3,6}
set b after removing 3 = {1,6}
set b after removing 3 = {1,6}
set b after removing 10 = {1,6}
set b after removing 6 = {1}
set b after removing 1 = {}
set b after adding {10,2} = {2,10}
TESTING: iset64 operator+(const iset64& a, const iset64& b)
Set a {1,2}
Set b {1,2,3}
a + b = {1,2,3}
TESTING:iset64 operator+(const iset64& a, const int b)
{1,2}
{1,2} + 1 = {1,2}
{1,2}
{1,2} + 3 = {1,2,3}
TESTING:iset64 operator+(const int b, const iset64& a)
Set a {1,2}
 1 + {1,2} = {1,2}
Set a {1,2}
 3 + {1,2}  = {1,2,3}
TESTING:iset64& iset64::operator+=(const iset64& a)
Set b {1,2}
Set a {1,3}
 {1,2} + {1,3}  = {1,2,3}
iset64& iset64::operator+=(const int b)
Set a {1,2}
 {1,2} + 3  = {1,2,3}
Set a {1,2}
Set b {3,4}
Set c {7,8}
Set d {1,2,3,4,5,7,8}
TESTING: iset64 operator-(const iset64& a, const iset64& b)
Set a {1,2}
Set b {1,2}
a - b = {}
TESTING: iset64 operator-(const iset64& a, const iset64& b)
Set a {1,5}
Set b {1,2,3}
a - b = {5}
TESTING: iset64 operator-(const iset64& a, const int b)
Set a {1,2}
a - 3 = {1,2}
TESTING: iset64 operator-(const int b, const iset64& a)
Set a {1,2}
3 - a = {3}
```

```
TESTING: iset64& iset64::operator-=(const iset64& a)
Set a {1,3}
Set b {1,2}
b -= a = {2}
TESTING: iset64& iset64::operator-=(const int b)
Set a {1,2}
a -= 3 = {1,2}
Set a {1,2}
Set b {2,4}
Set c {2,8}
Set d {1,5}
TESTING: iset64 operator*(const iset64& a, const iset64& b)
Set a {1,2}
Set b {1,2,3}
a * b = {1,2}
TESTING:iset64 operator*(const iset64& a, const int b)
Set a {1,2}
{1,2} * 1 = {1}
Set a {1,2}
{1,2} * 3 = {}
TESTING:iset64 operator*(const int b, const iset64& a)
Set a {1,2}
 1 * {1,2} = {1}
Set a {1,2}
 3 * {1,2}  = {}
TESTING:iset64& iset64::operator*=(const iset64& a)
Set b {1,2}
Set a {1,3}
 {1,2} * {1,3}  = {1}
iset64& iset64::operator*=(const int b)
Set a {1,2}
 {1,2} * 3  = {}
Set a {1,2}
Set b {2,4}
Set c {2,8}
Set d {2,5}
TESTING: bool operator==(const iset64& a, const iset64& b)
Set a {1,2}
Set b {1,2}
a == b true
{1,2}{2}a == b false
TESTING: bool operator!=(const iset64& a, const iset64& b)
Set a {1,2}
Set b {1,2}
a != b false
Set a {1,2}
Set b {2}
a != b true
a = {1,2,63}
++a = {0,2,3}
```

```
a = {1,2,63}
acopy = {1,2,63}
a++ = {0,2,3}
rhs = {1,2,63}
a = {0,2,63}
--a = {1,62,63}
a = {0,2,63}
acopy = {0,2,63}
a-- = {1,62,63}
rhs = {0,2,63}
a = {0,2,63}
~a =
{1,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27
,
28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,5
1,52,53,54,55,56,57,58,59,60,61,62}
ans =
{1,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27
,
28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,5
1,52,53,54,55,56,57,58,59,60,61,62}
~ans = {0,2,63}
a = {0,2,63}
a exists
b = {}
b does not exists
a = {0,2,63}
a exists
b = {}
b does not exists
a = {4,5,6}
b = {5,6,8}
aplusb = {4,5,6,8}
aplusbbar =
{0,1,2,3,7,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,
29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,5
2,53,54,55,56,57,58,59,60,61,62,63}
abar =
{0,1,2,3,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,2
8,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51
,52,53,54,55,56,57,58,59,60,61,62,63}
bbar =
{0,1,2,3,4,7,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,2
8,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51
,52,53,54,55,56,57,58,59,60,61,62,63}
abarplusbbar =
{0,1,2,3,4,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27
,
28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,5
1,52,53,54,55,56,57,58,59,60,61,62,63}
```

```
abardotbbar =
{0,1,2,3,7,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,
29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,5
2,53,54,55,56,57,58,59,60,61,62,63}
adotb  = {5,6}
adotbbar  =
{0,1,2,3,4,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27
,
28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,5
1,52,53,54,55,56,57,58,59,60,61,62,63}
Demorgan law (a+b)' = a'. b' is proved
Demorgan law (a.b)' = a' + b' is proved
a = {1,2,4,5}
b = {2,3,5,6}
aplusb = {1,2,3,4,5,6}
aplusbbar =
{0,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,3
0,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53
,54,55,56,57,58,59,60,61,62,63}
abar =
{0,3,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,
29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,5
2,53,54,55,56,57,58,59,60,61,62,63}
bbar =
{0,1,4,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,
29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,5
2,53,54,55,56,57,58,59,60,61,62,63}
abarplusbbar =
{0,1,3,4,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27
,
28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,5
1,52,53,54,55,56,57,58,59,60,61,62,63}
abardotbbar =
{0,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,3
0,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53
,54,55,56,57,58,59,60,61,62,63}
adotb  = {2,5}
adotbbar  =
{0,1,3,4,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27
,
28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,5
1,52,53,54,55,56,57,58,59,60,61,62,63}
Demorgan law (a+b)' = a'. b' is proved
Demorgan law (a.b)' = a' + b' is proved
Program ended with exit code: 0
```