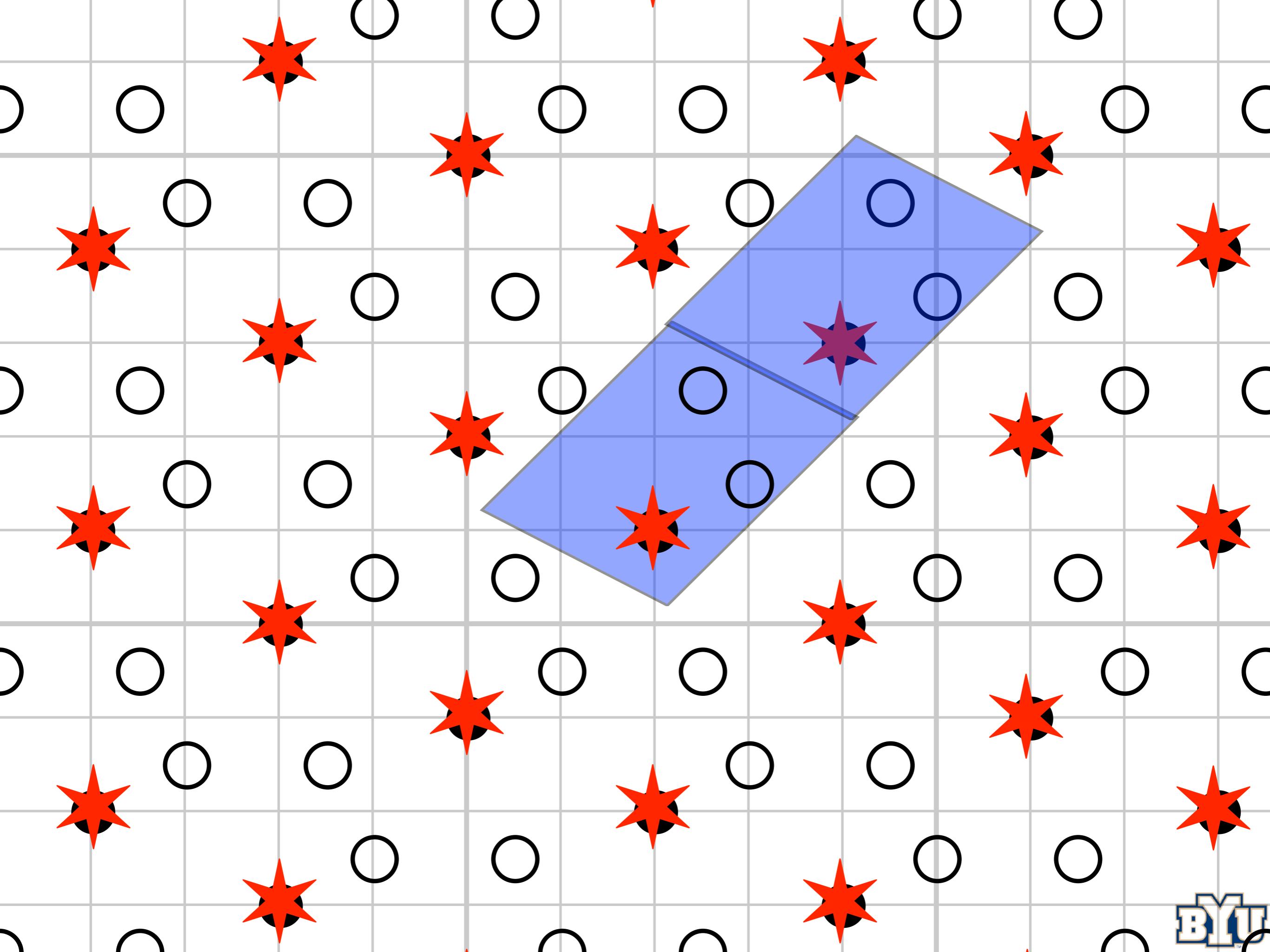
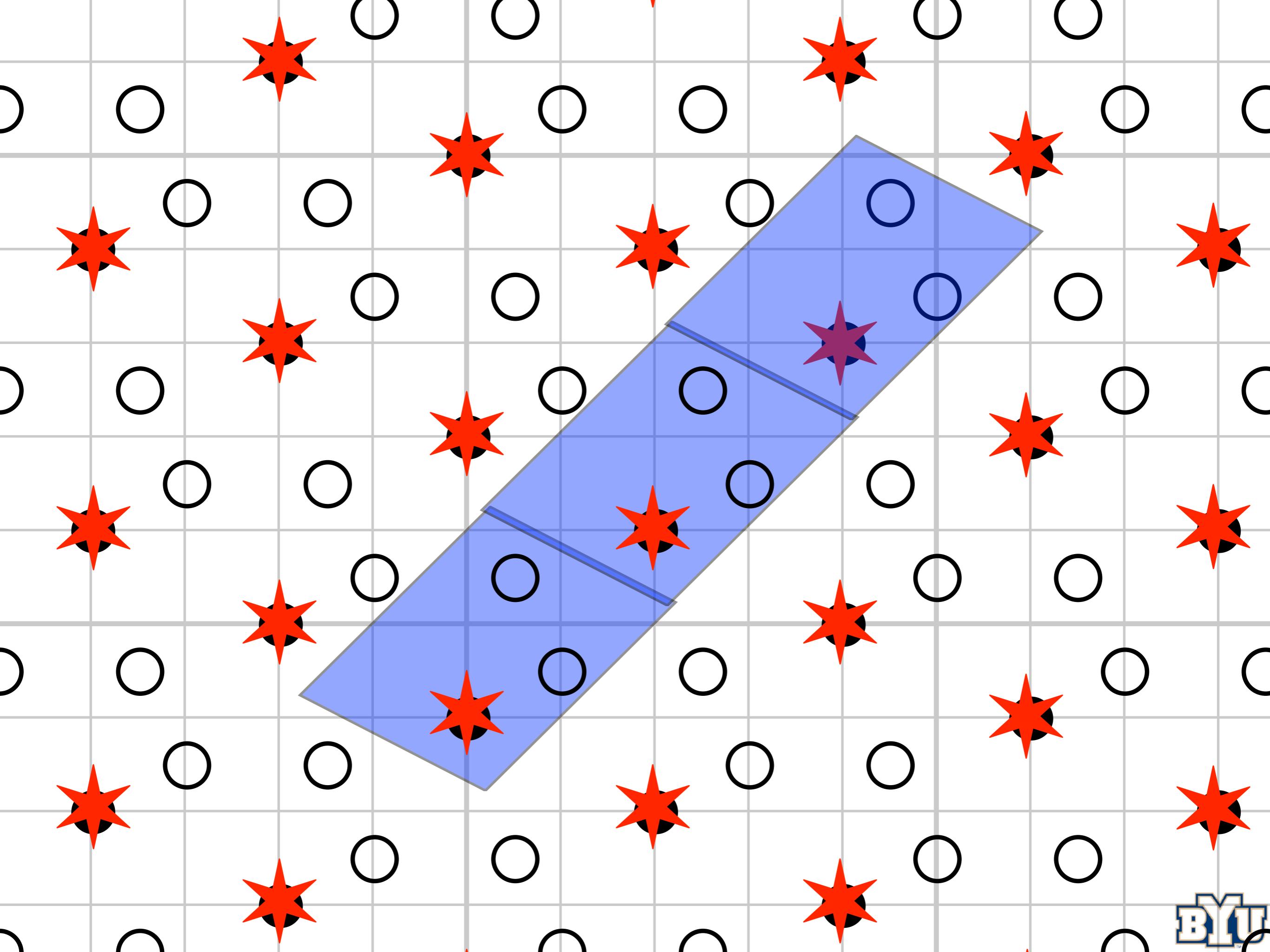


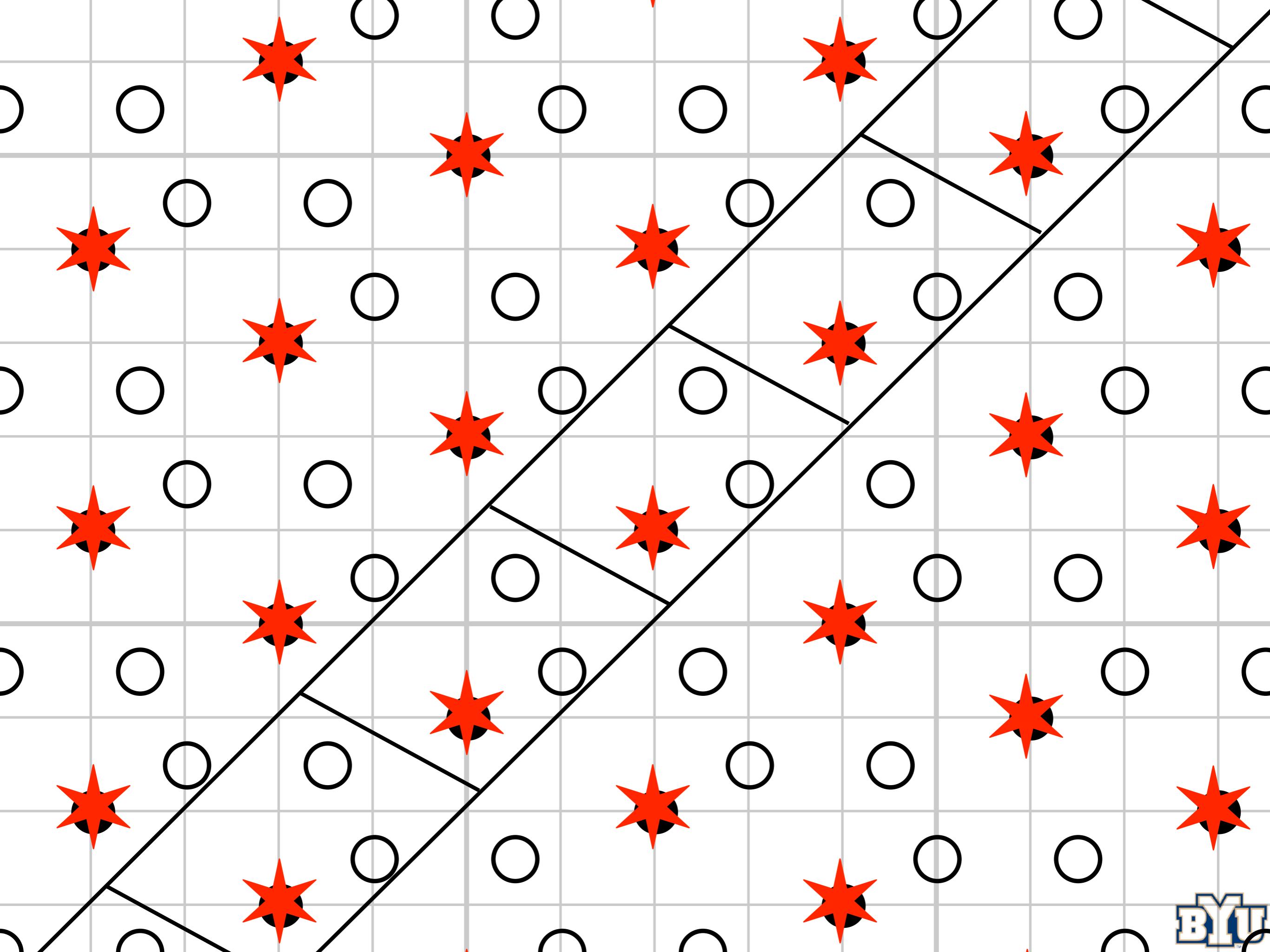
BYU



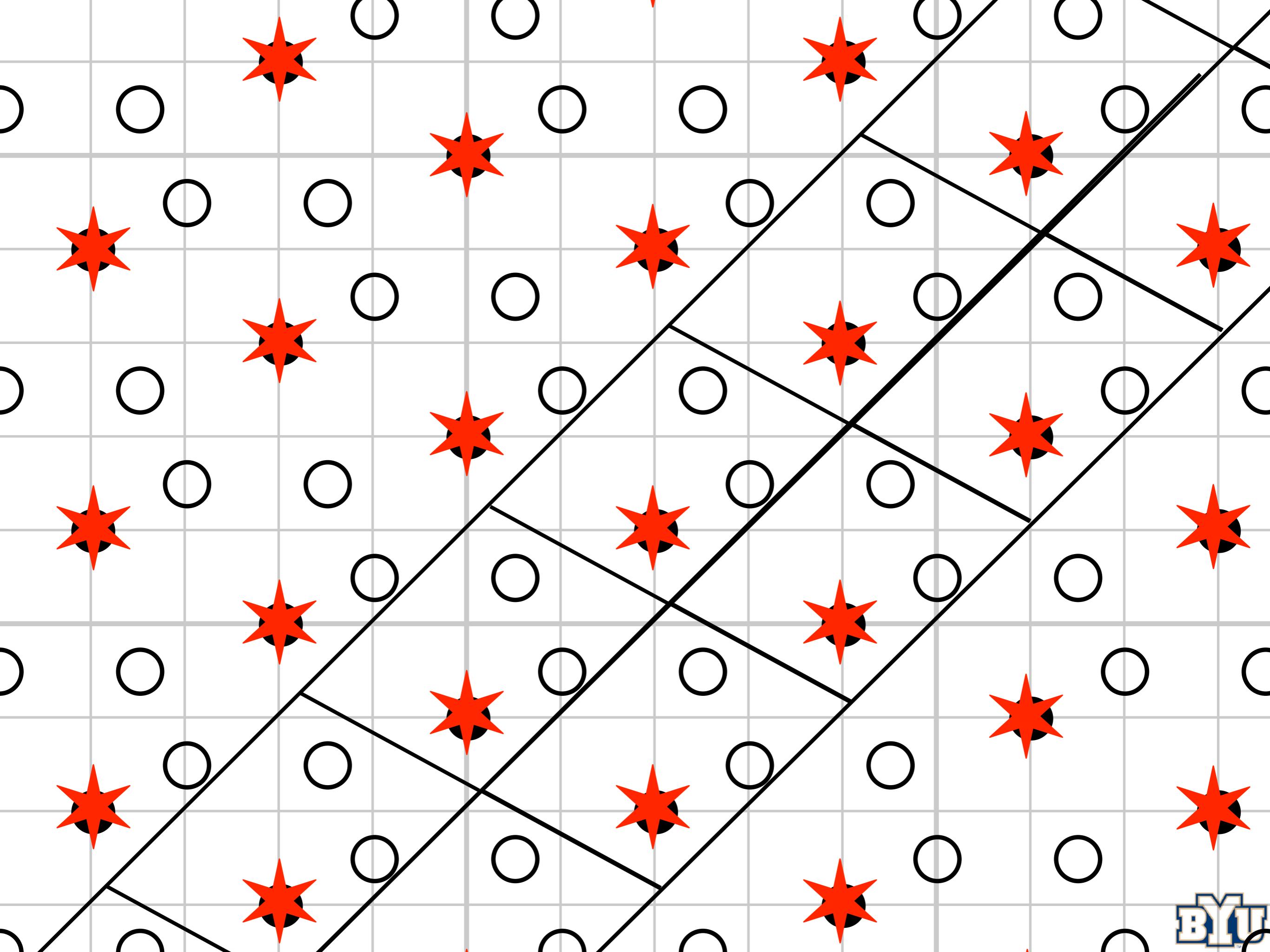
BYU



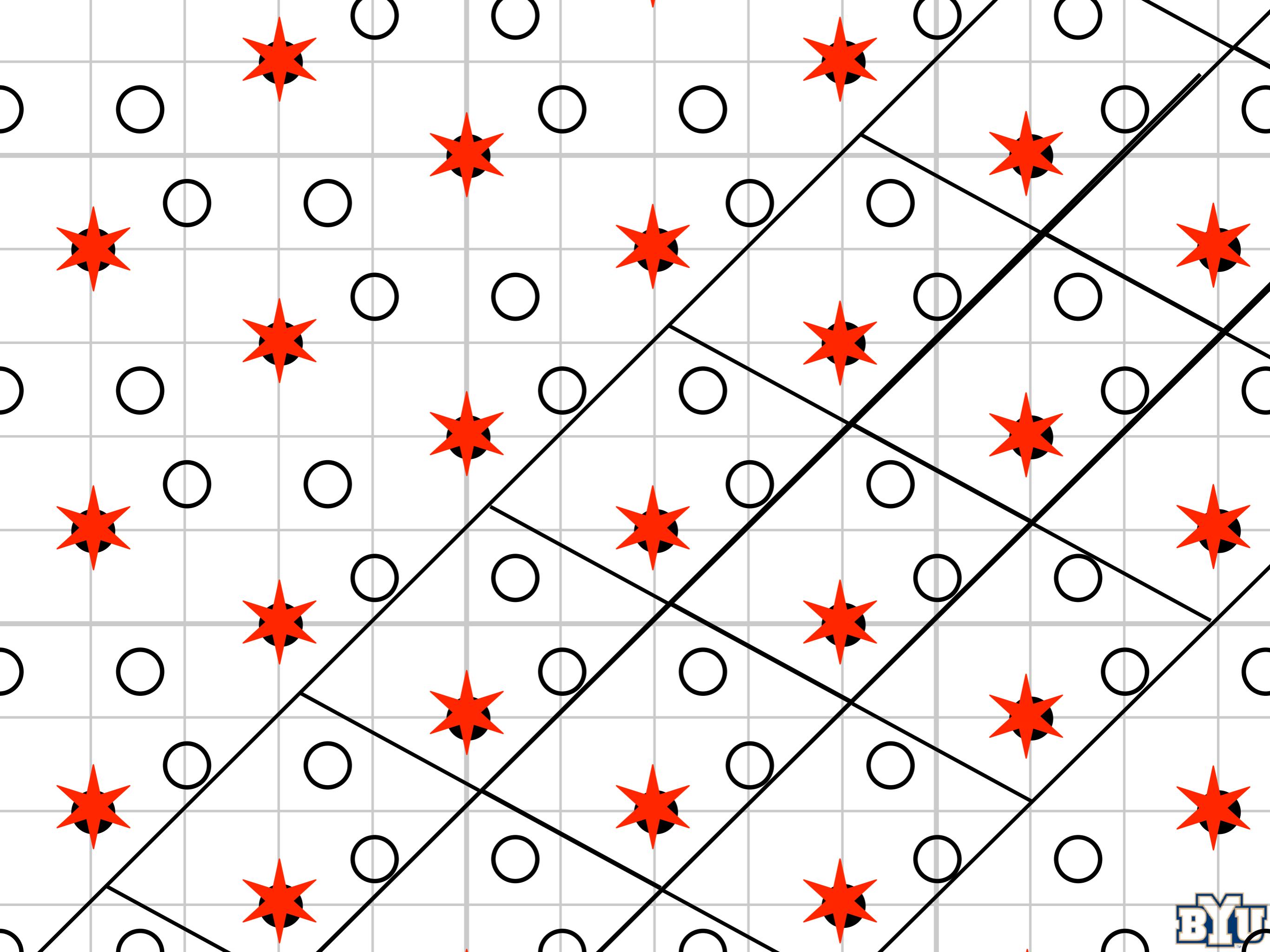
BYU



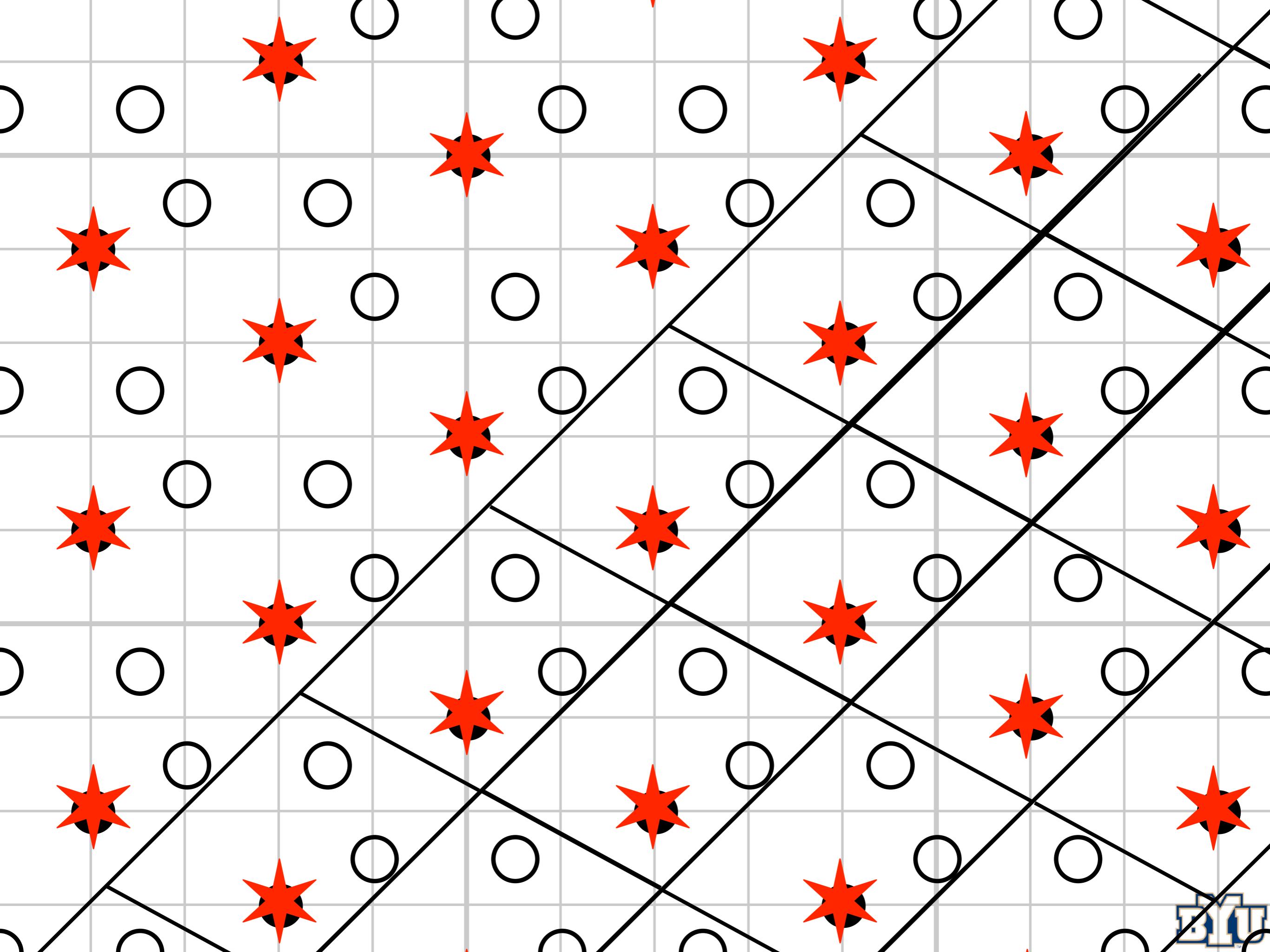
BYU

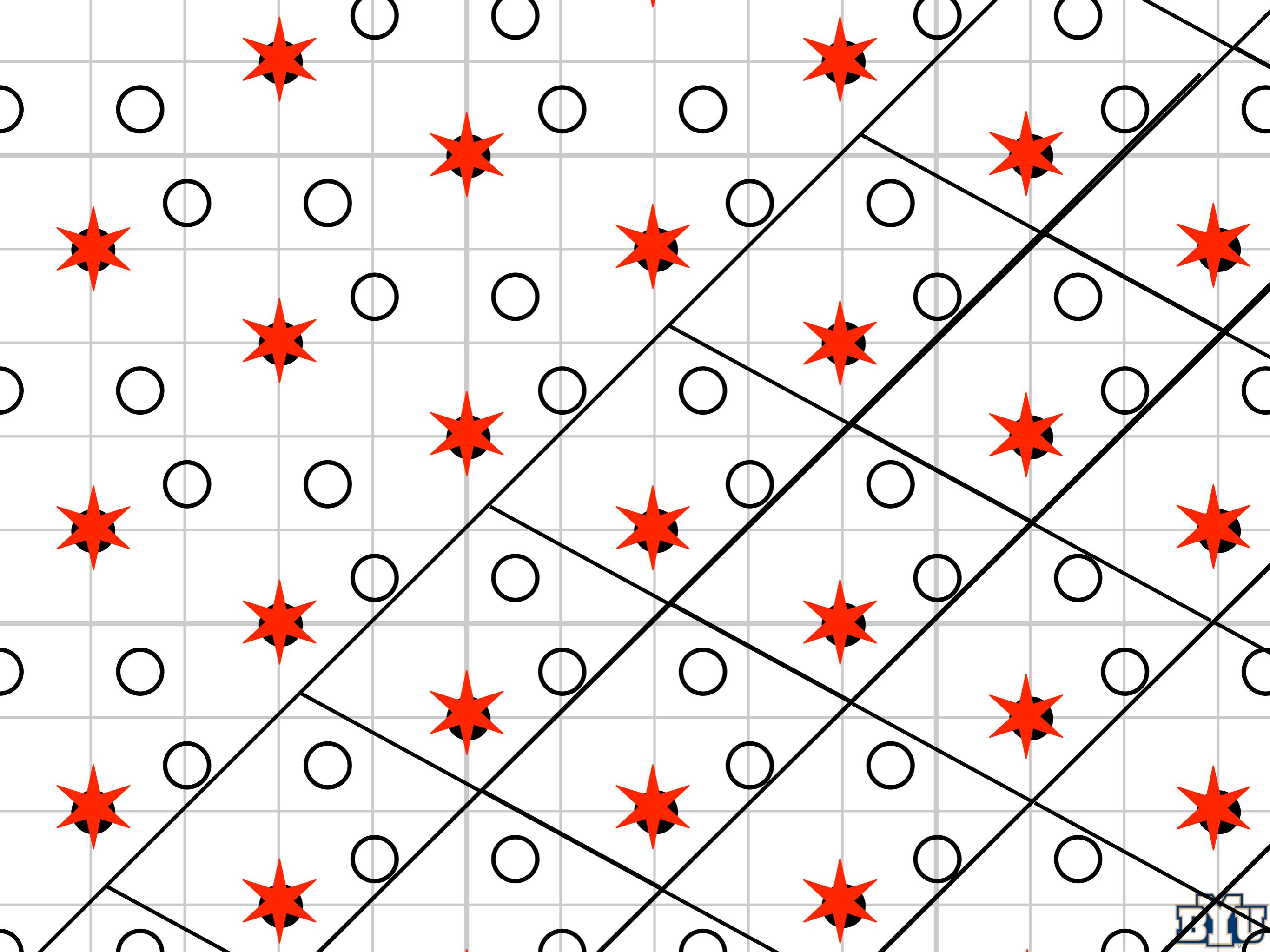


BYU

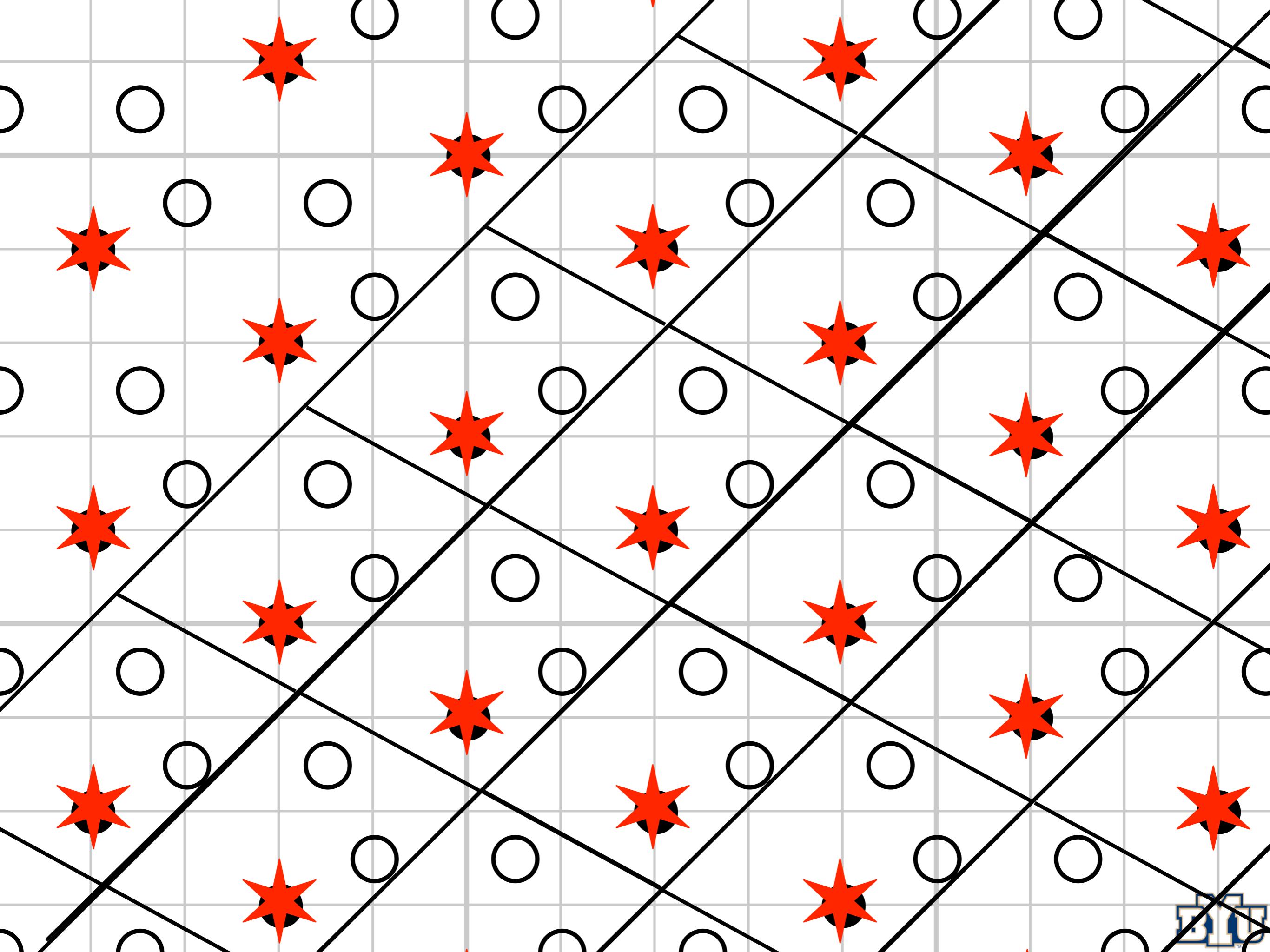


BYU

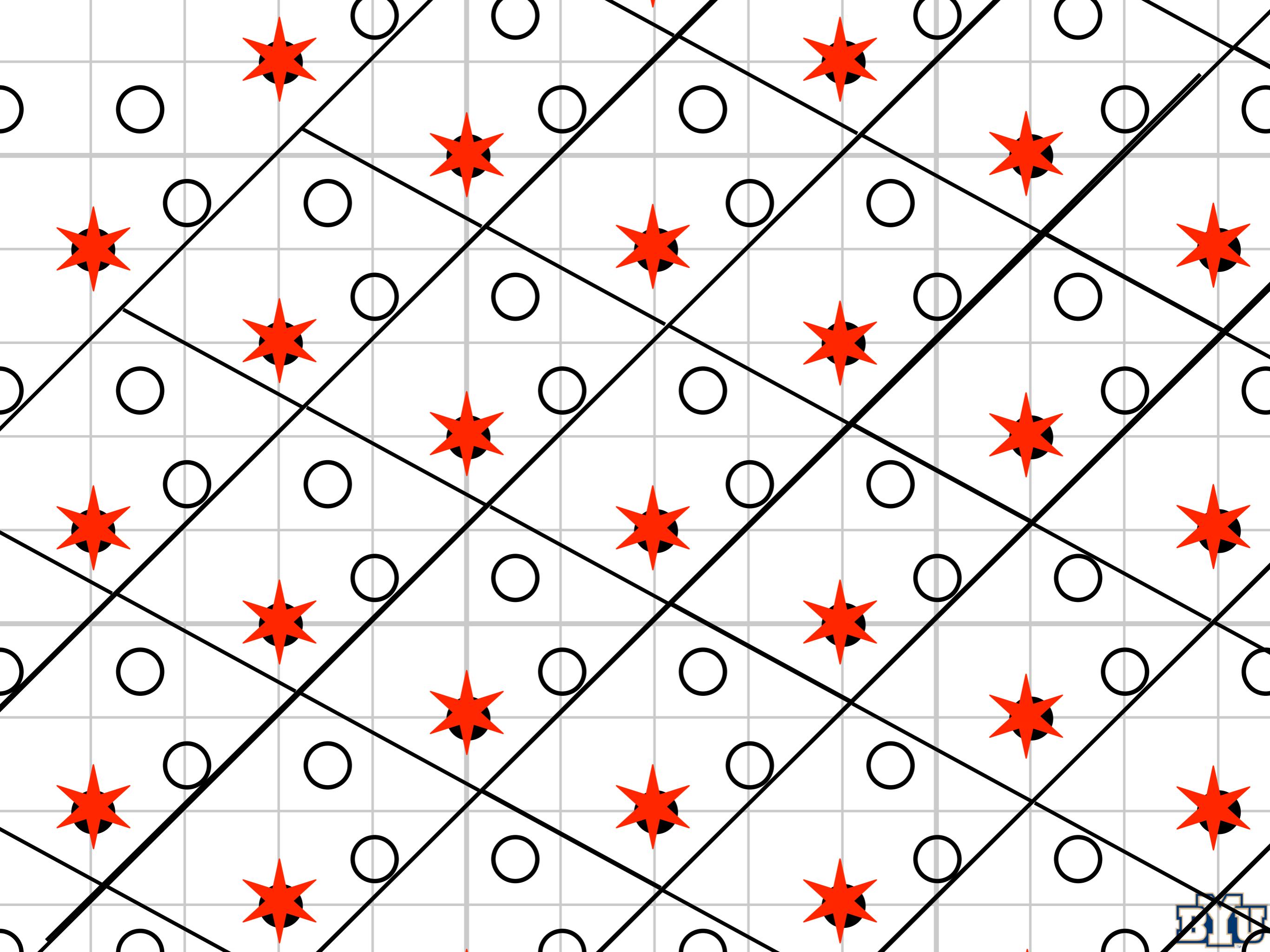




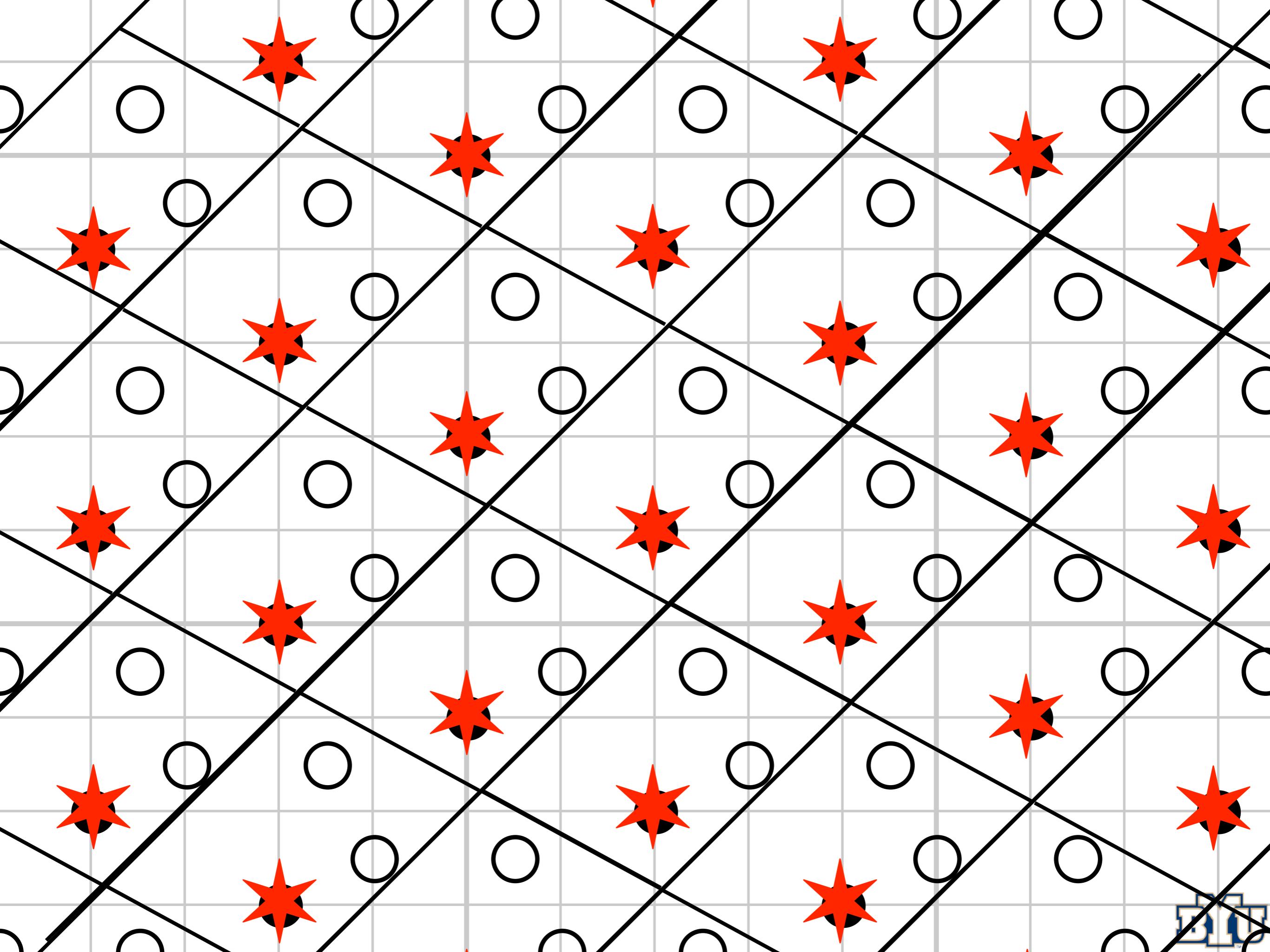
BU



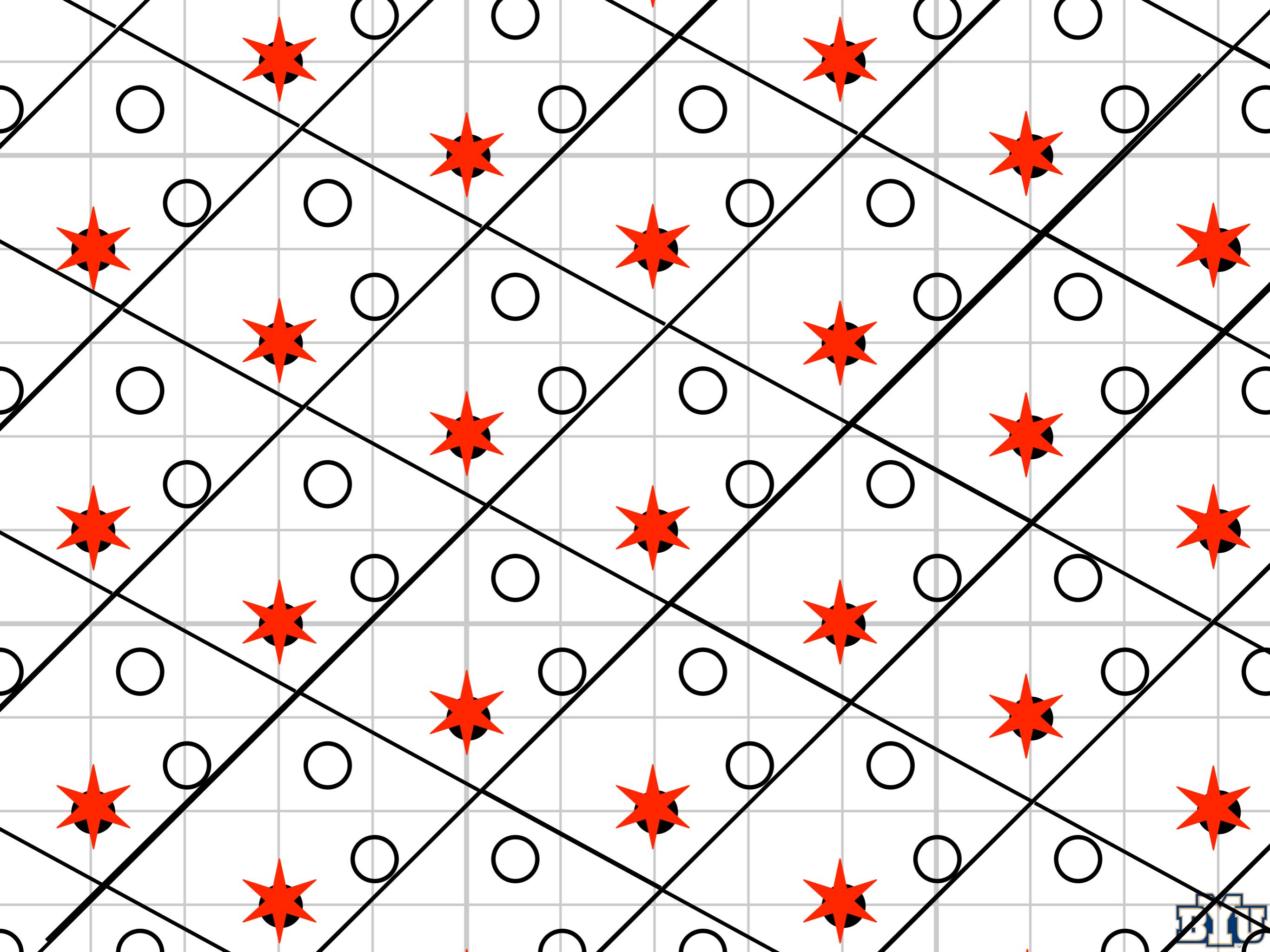
BU



BIU



BU

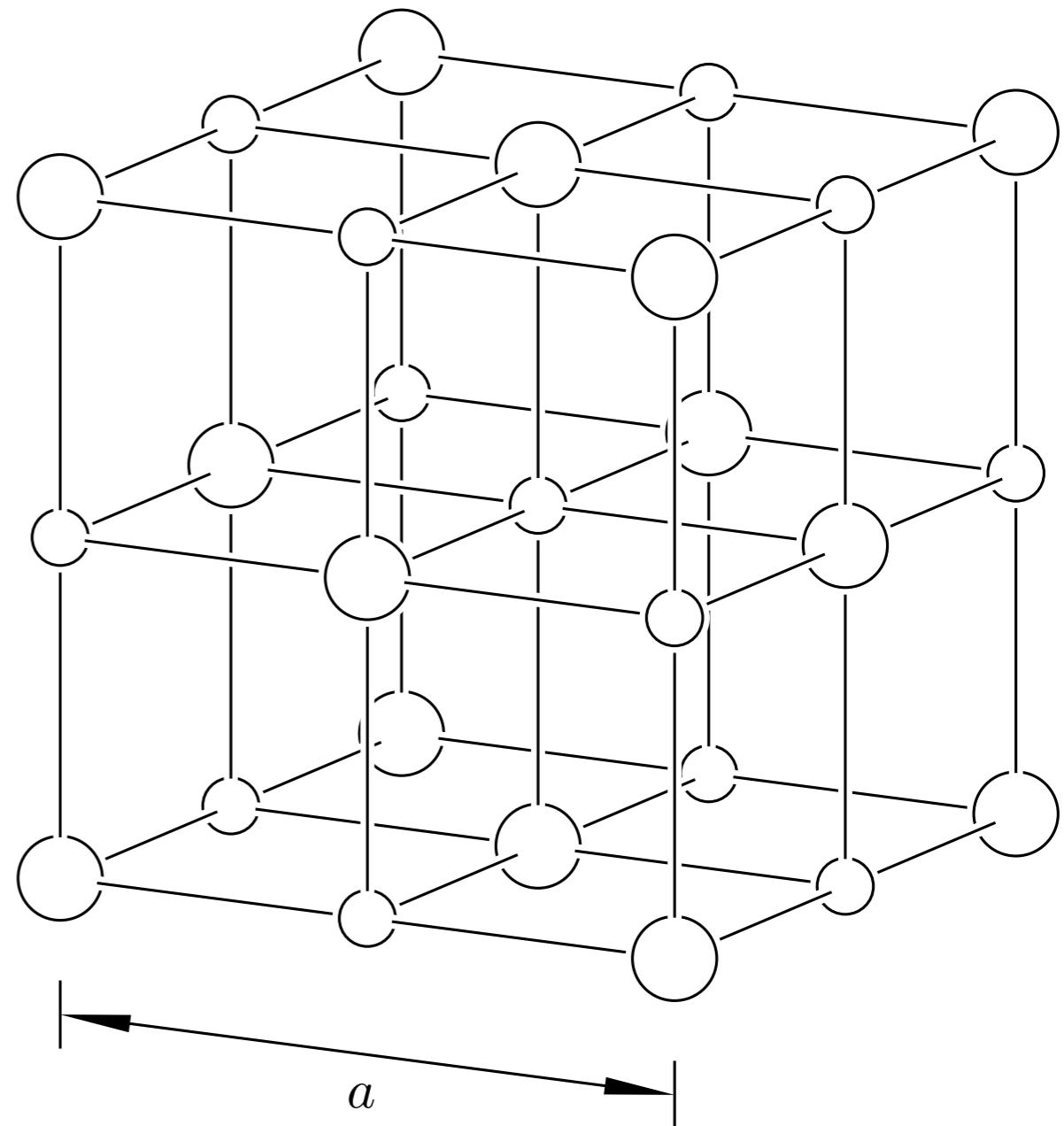


BIU

Question #16

Suppose we place a point at the center of every Na atom and every Cl atom in NaCl. Do these points form a lattice? (Why or why not?)

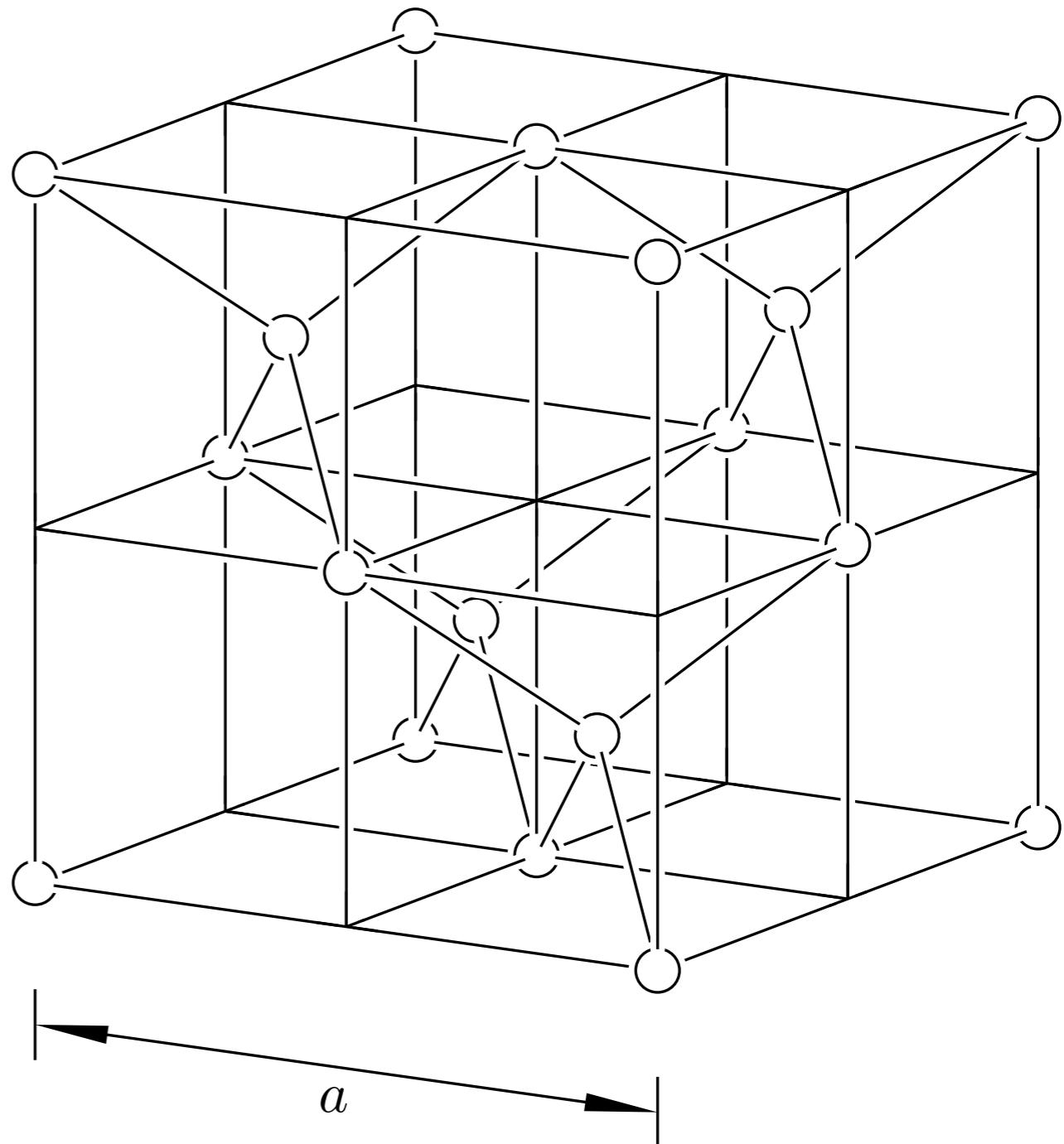
- A. No, not a lattice
- B. Yes, lattice



Question #17

Suppose we place a point at the center of every carbon atom in diamond. Do these points form a lattice? (Why or why not?)

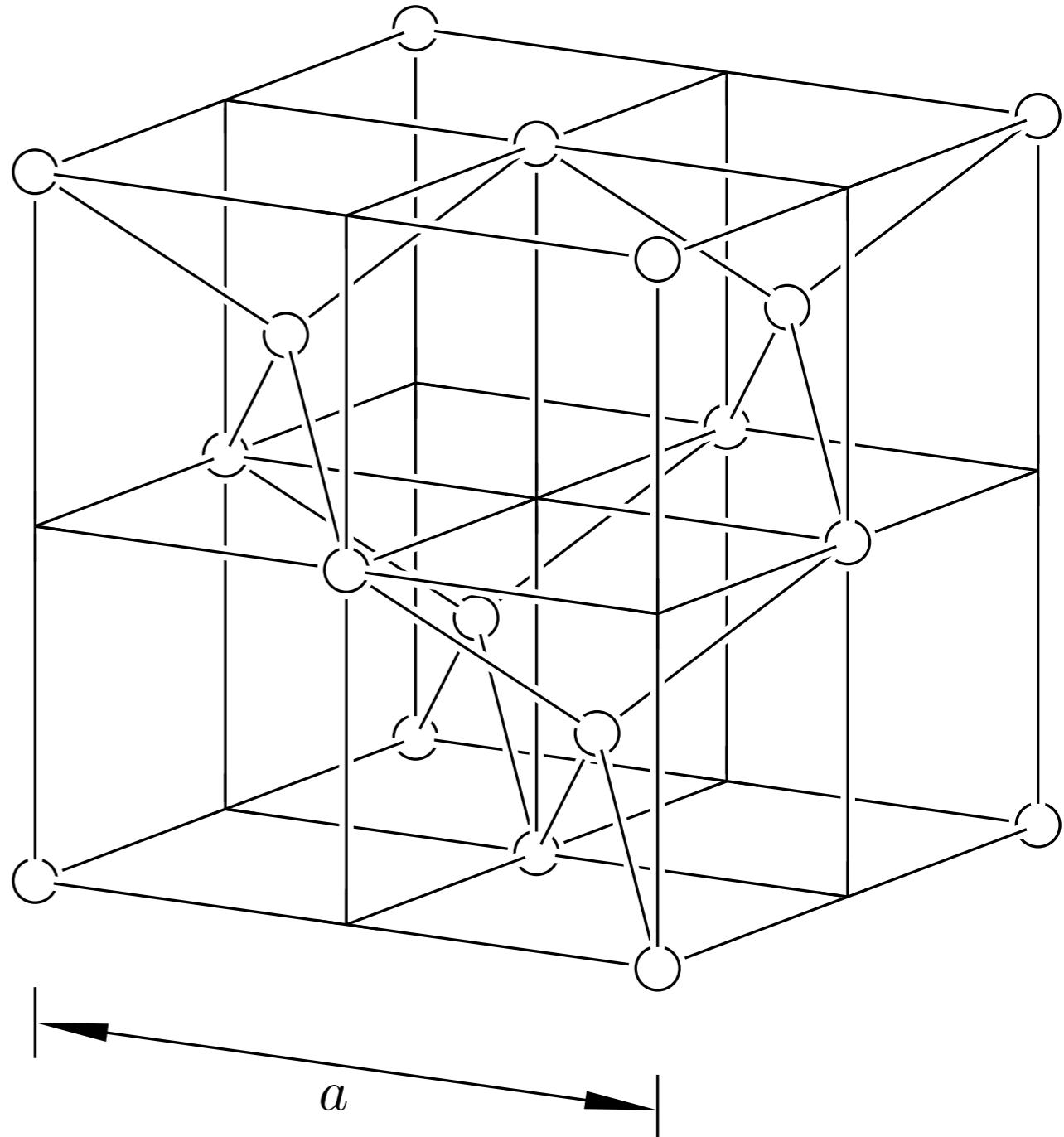
- A. Yes, lattice
- B. No, not a lattice



Question #18

What is the lattice for the crystal structure of diamond (shown to the right)?

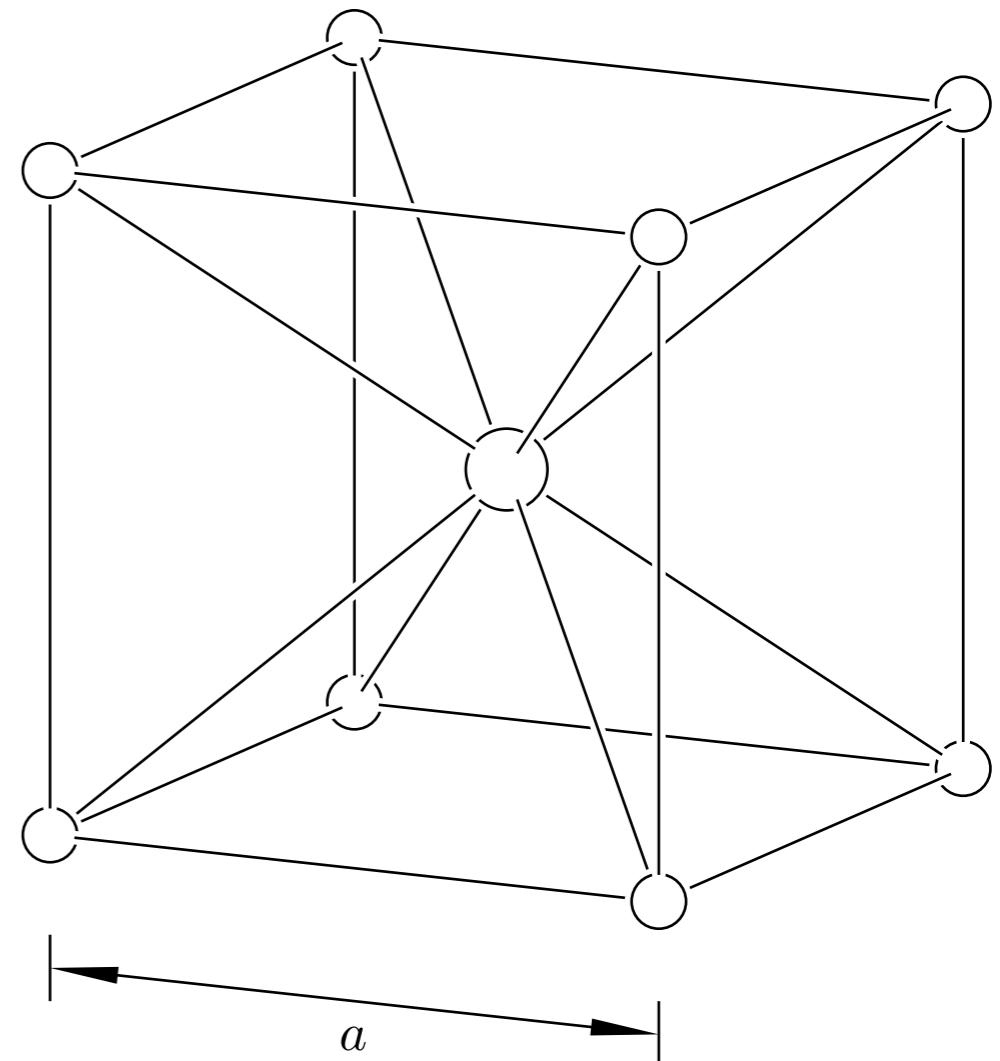
- A. hcp
- B. bcc
- C. sc
- D. fcc
- E. NaCl



Question #19

What is the lattice for the crystal structure of CsCl (shown to the right)?

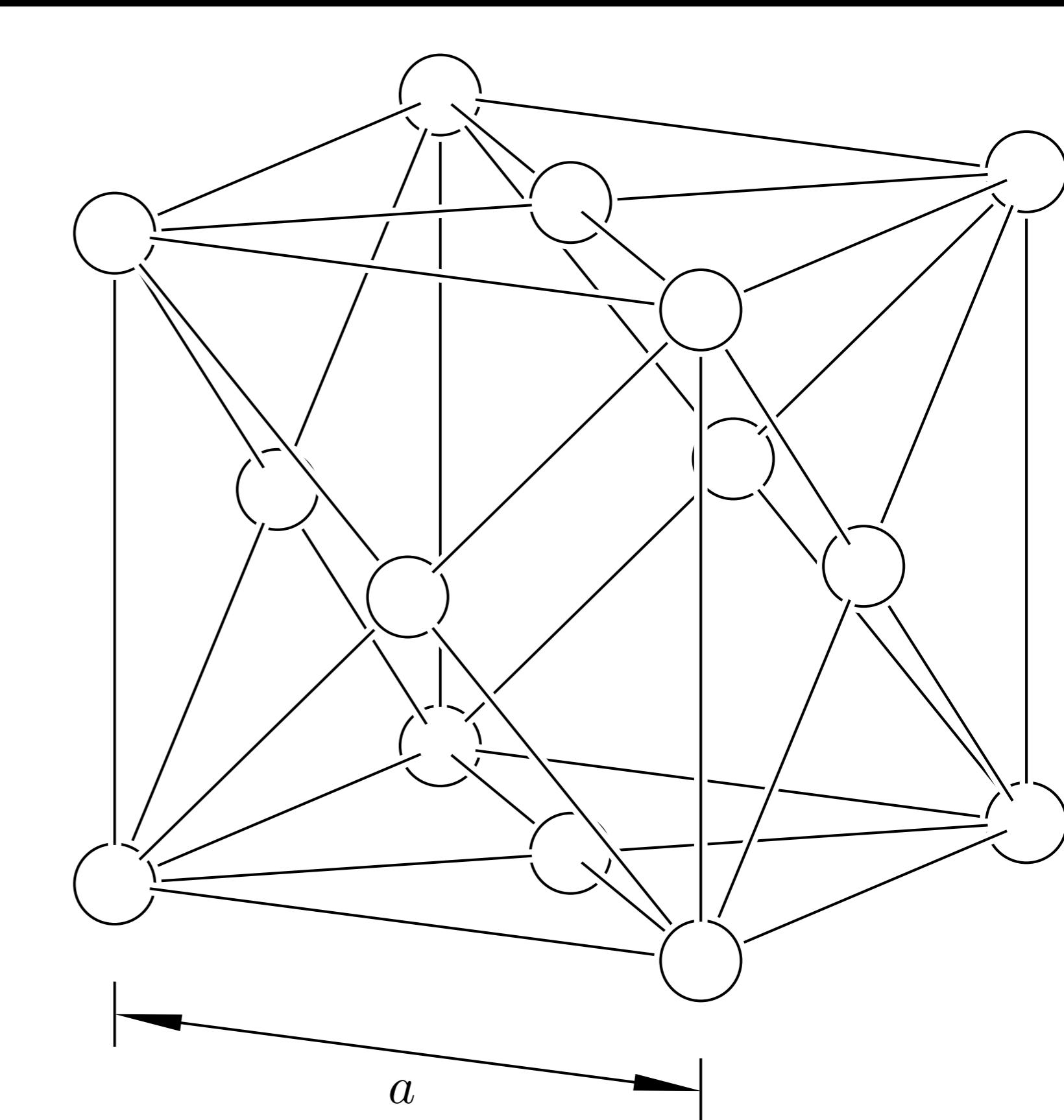
- A. fcc
- B. bcc
- C. NaCl
- D. hcp
- E. sc



Question #20

How many lattice points are contained in the conventional unit cell of the fcc lattice?

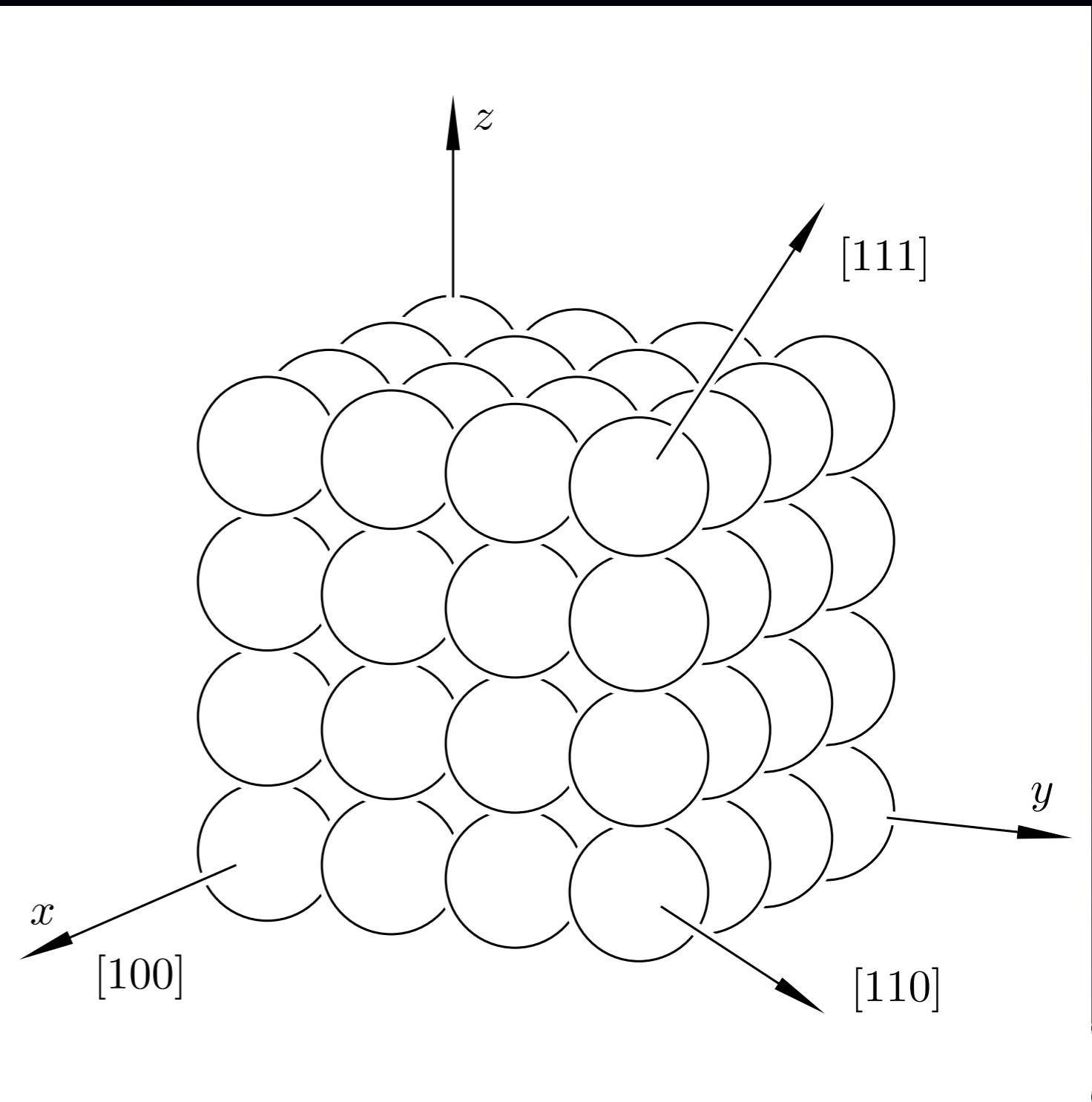
- (A) 1
- (B) 2
- (C) 4
- (D) 7
- (E) 14



Question #2 |

What direction is shown by the red arrow?

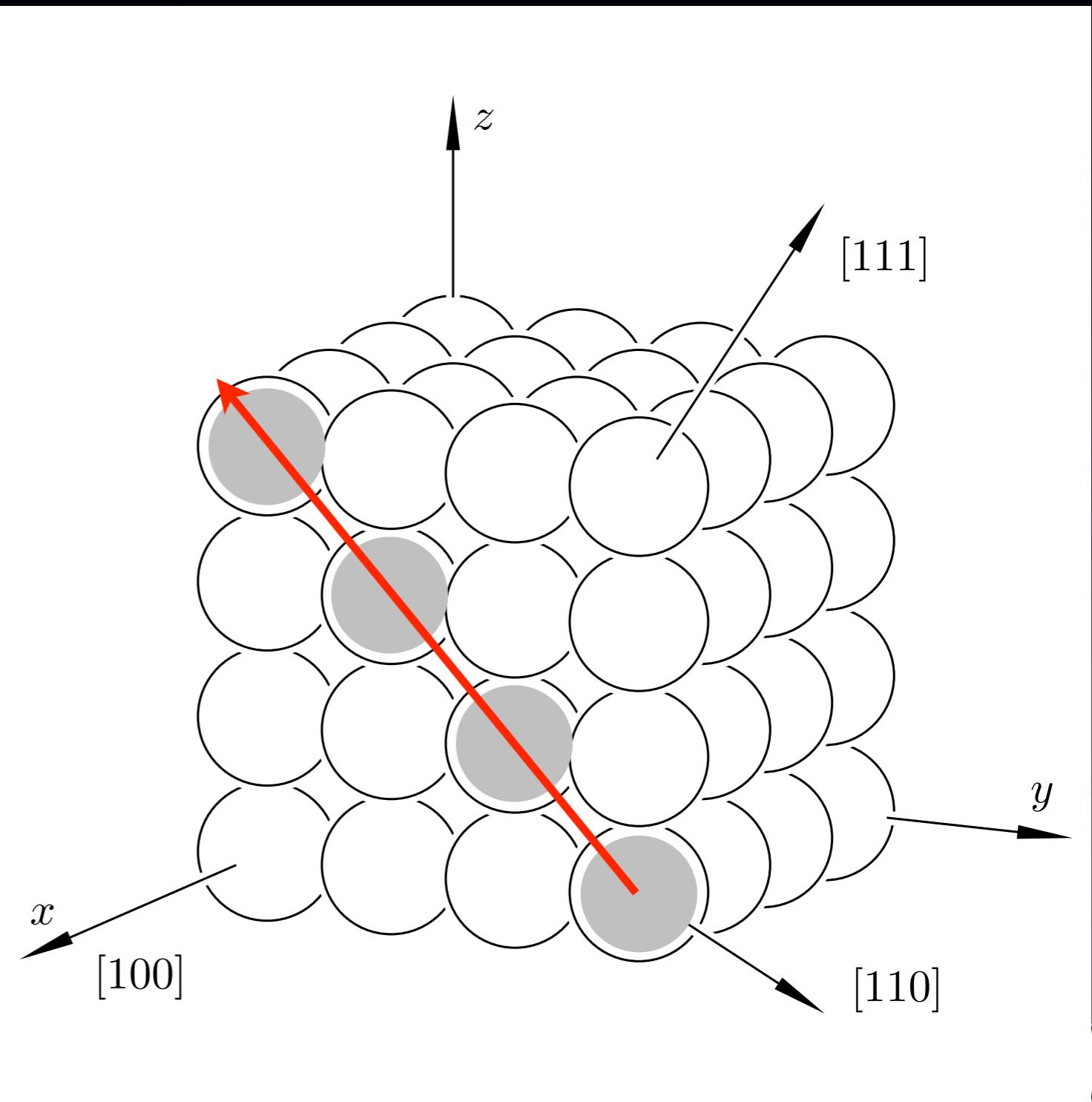
- (A) $[1\bar{1}1]$
- (B) $[\bar{1}00]$
- (C) $[101]$
- (D) $[0\bar{1}1]$
- (E) $[11\bar{1}]$



Question #2 |

What direction is shown by the red arrow?

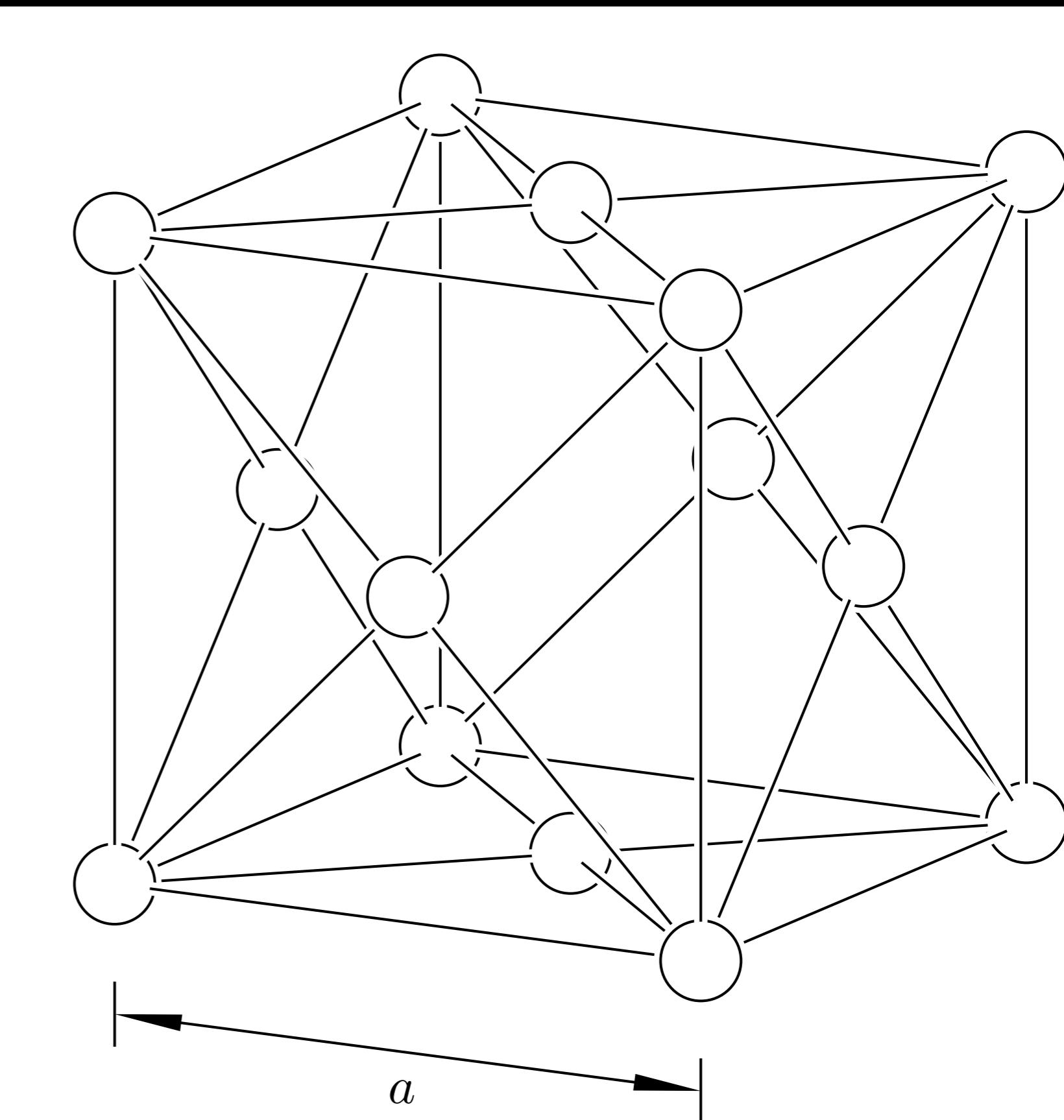
- (A) $[1\bar{1}1]$
- (B) $[\bar{1}00]$
- (C) $[101]$
- (D) $[0\bar{1}1]$
- (E) $[11\bar{1}]$



Question #22

In an fcc lattice, nearest neighbors occur along which direction?

(A) [110]
(B) [100]
(C) [111]
(D) [210]
(E) None of the above.

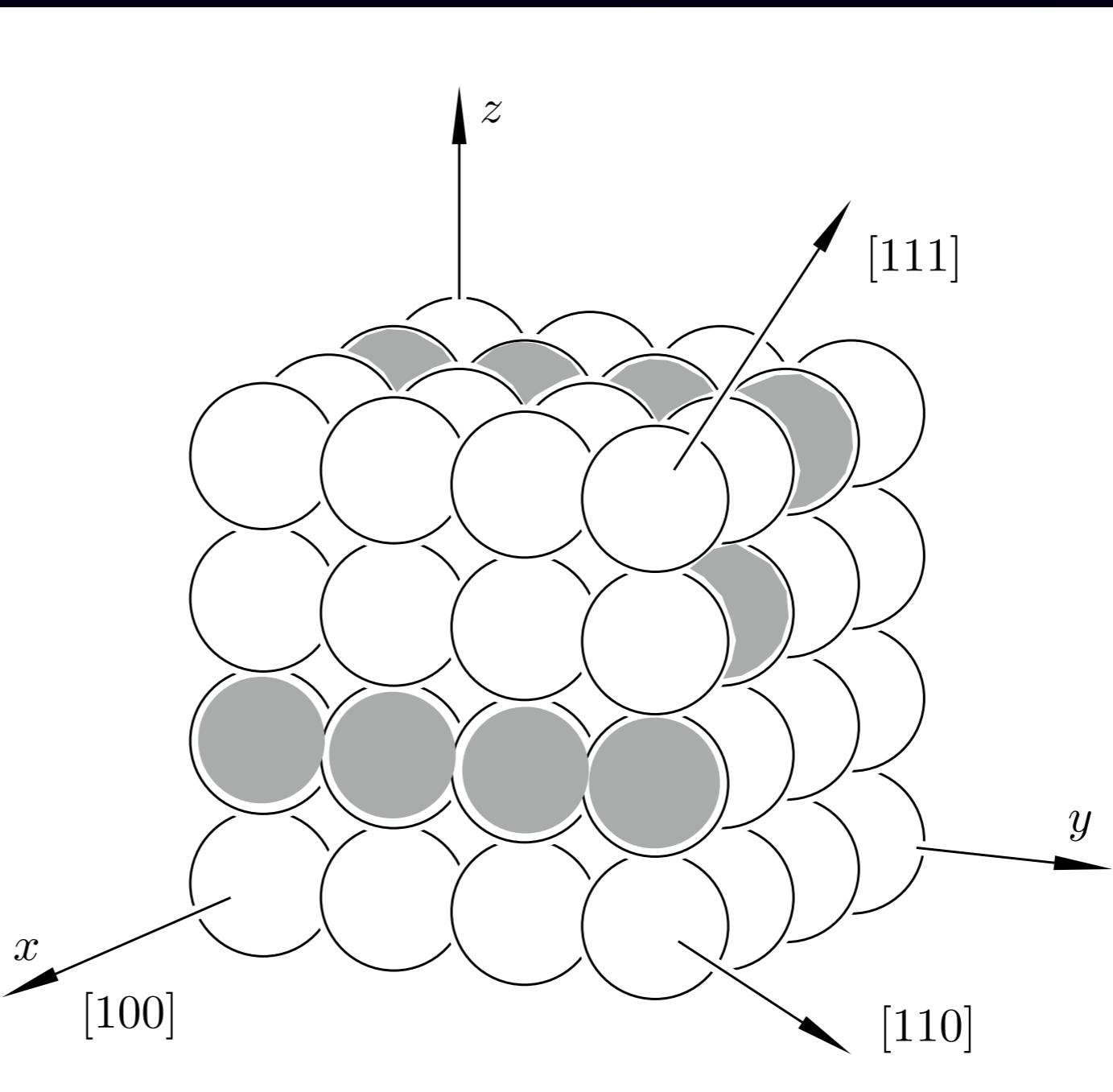


Planes: 3 numbers in ()

Question # 23

What plane is shaded in this picture?

- (A) (101)
- (B) (010)
- (C) (100)
- (D) (110)
- (E) (001)
- (F) (111)
- (G) (211)
- (H) (321)



Planes: 3 numbers in ()

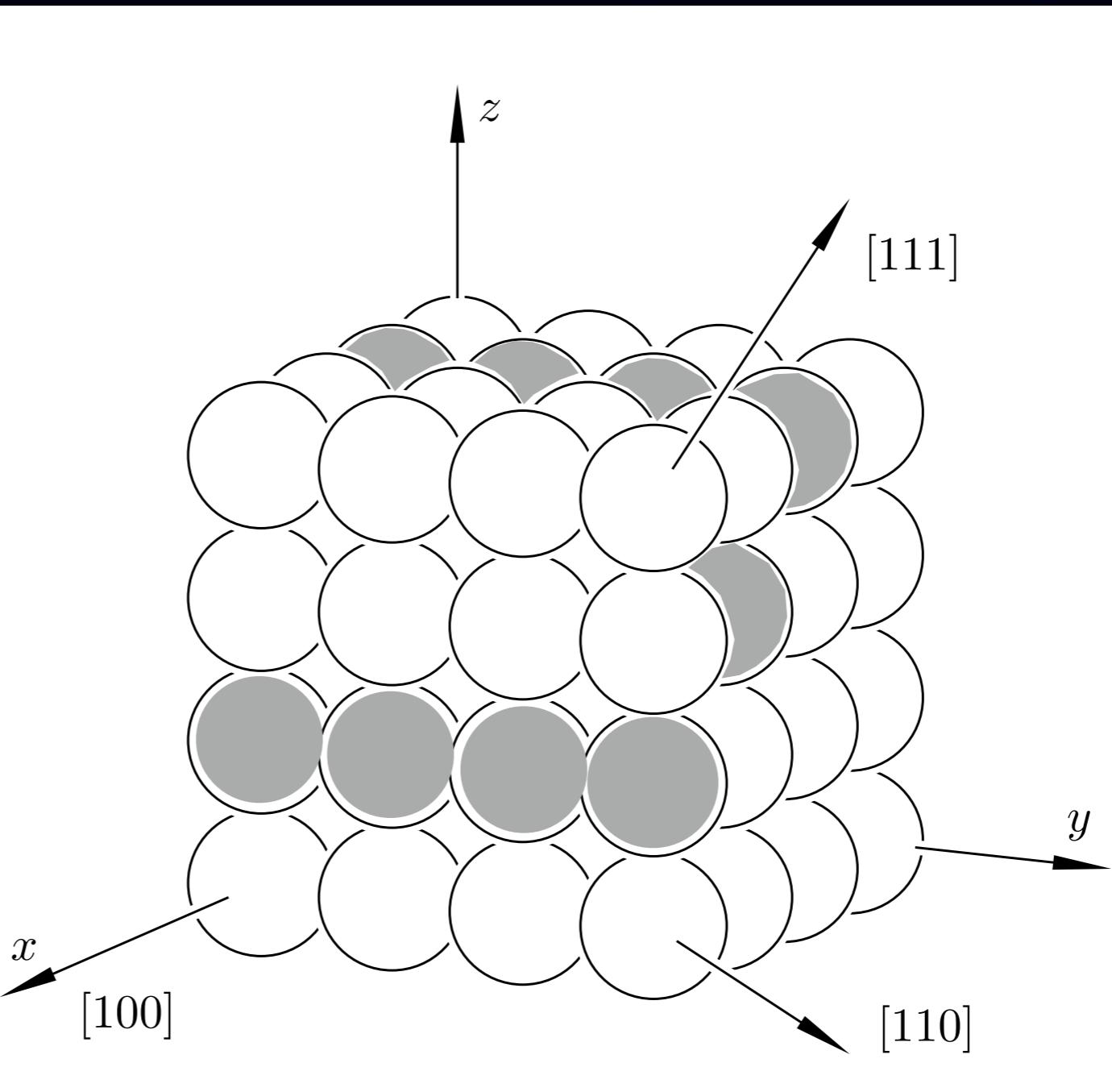
Question # 23

$(n_1 \ n_2 \ n_3)$

(100) is \perp to $[100]$

What plane is shaded in this picture?

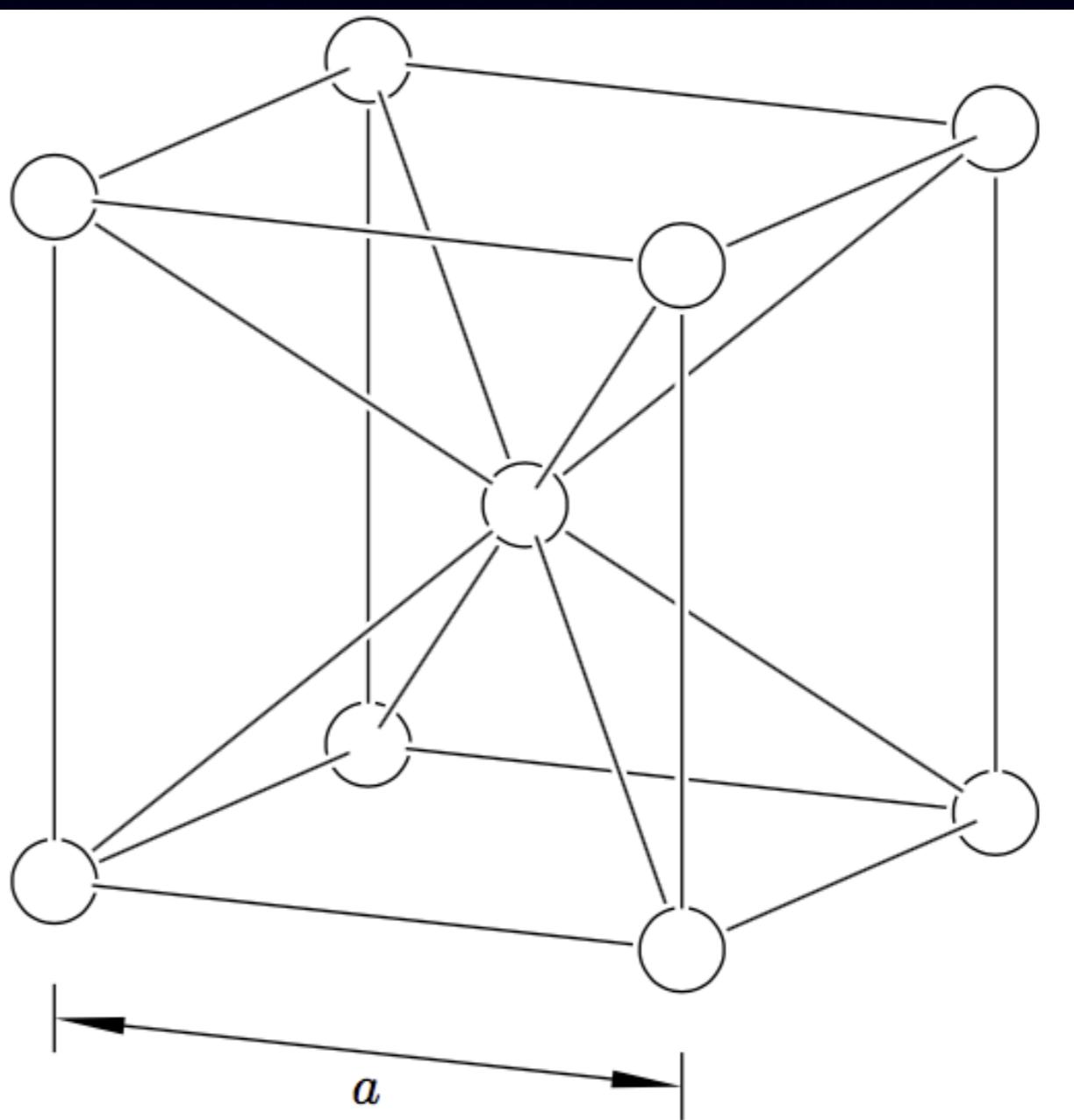
- (A) (101)
- (B) (010)
- (C) (100)
- (D) (110)
- (E) (001)
- (F) (111)
- (G) (211)
- (H) (321)



Question #24

How many lattice points are contained in the conventional unit cell of the bcc lattice?

- (A) 2
- (B) 1
- (C) 14
- (D) 7
- (E) 4



Bravais Lattices

Question # 25

Do the black points form a lattice?

A. .



B. .



C. Yes



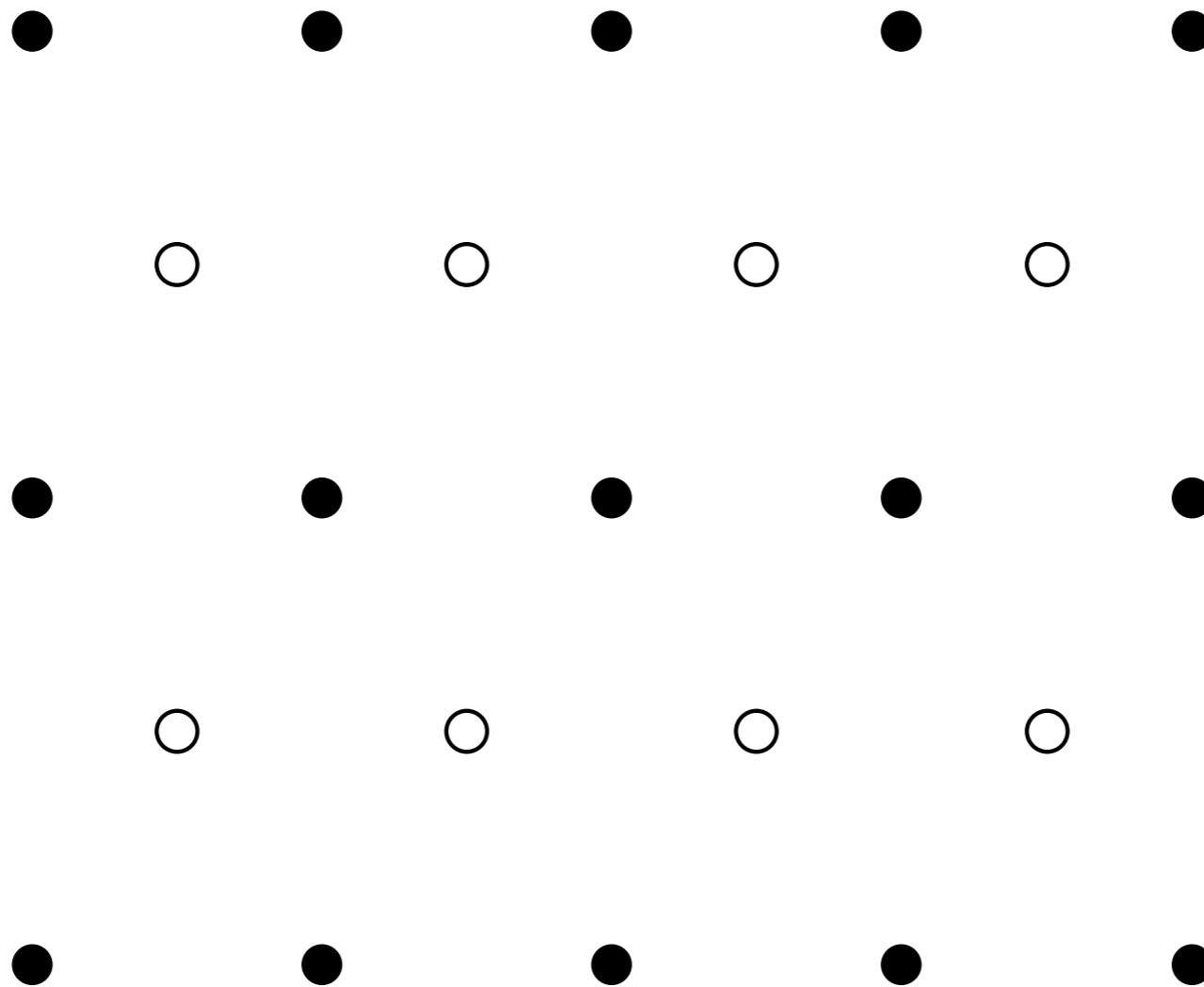
D. .



E. No

Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell



Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell

X X X X X

○ ○ ○ ○

X X X X X

○ ○ ○ ○

X X X X X

Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell

X X X X X

○ ○ ○ ○

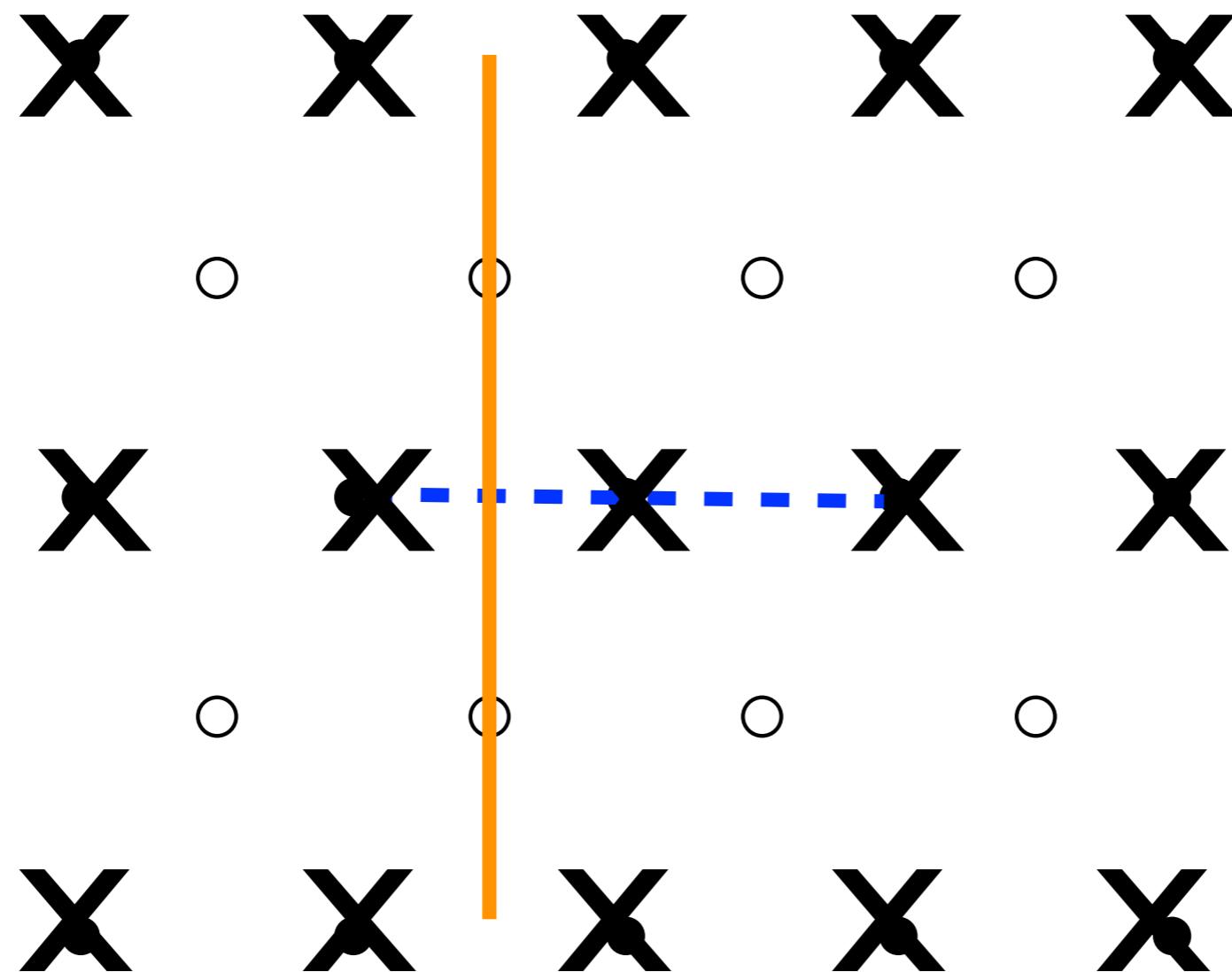
X X-X-X-X X

○ ○ ○ ○

X X X X X

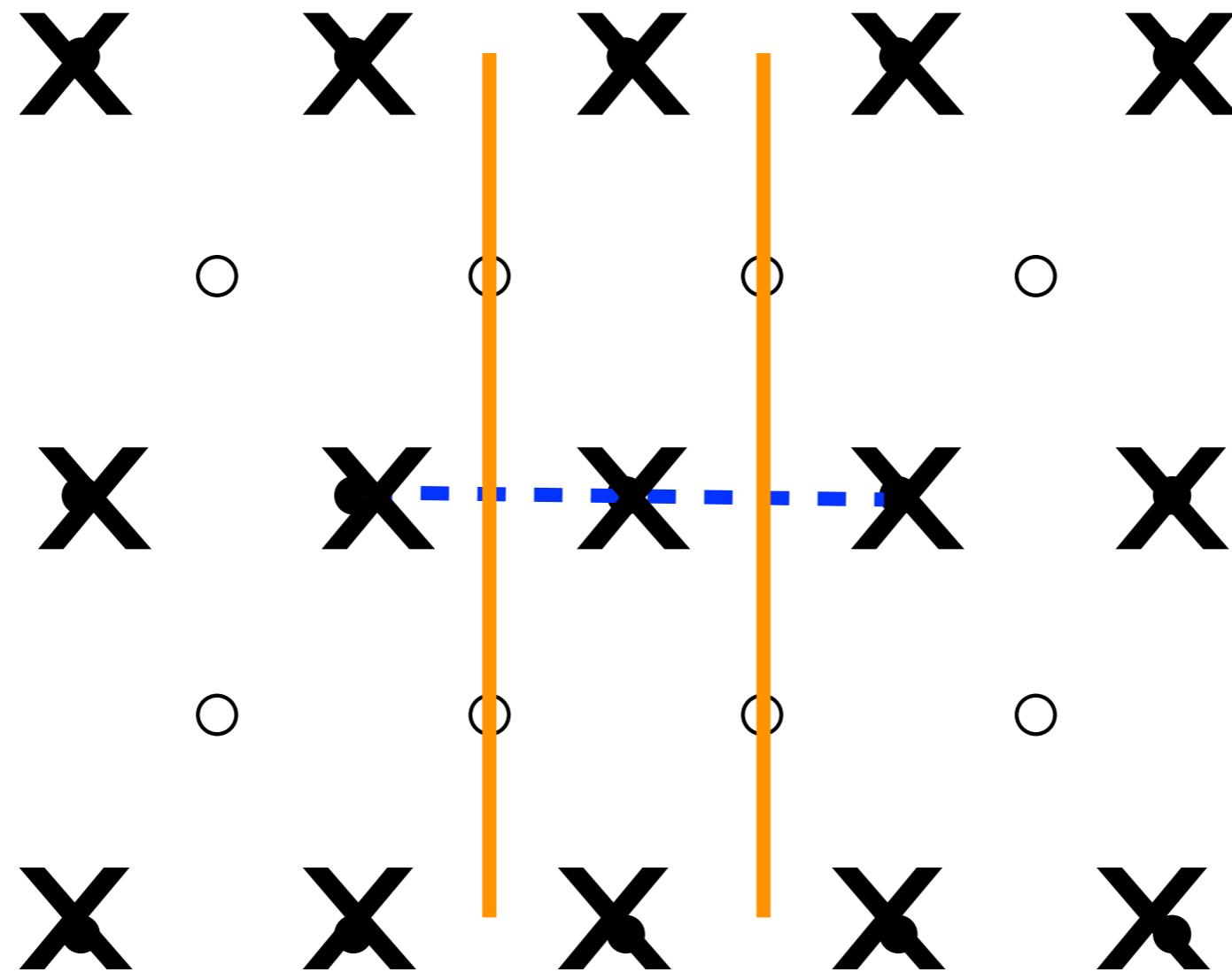
Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell



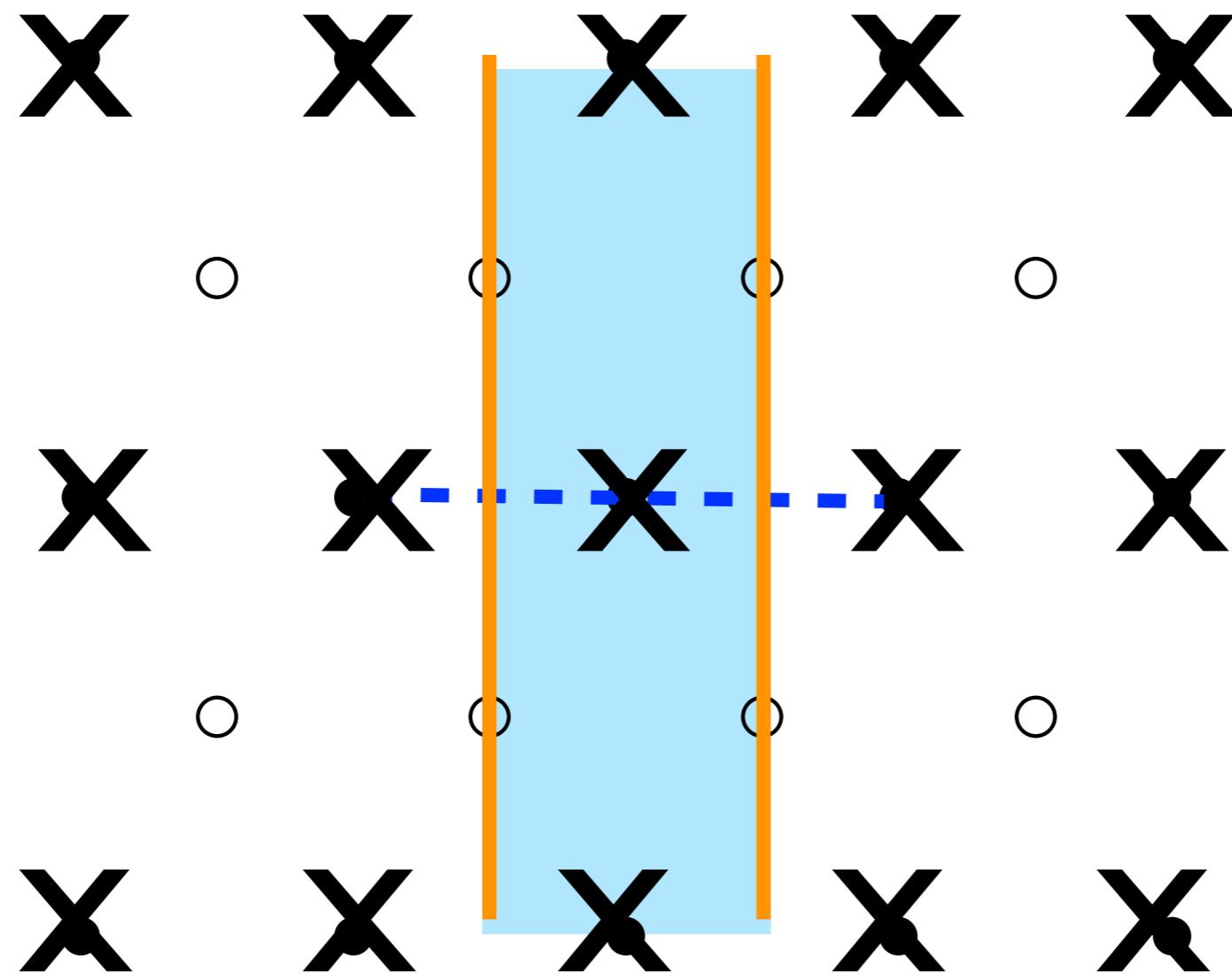
Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell



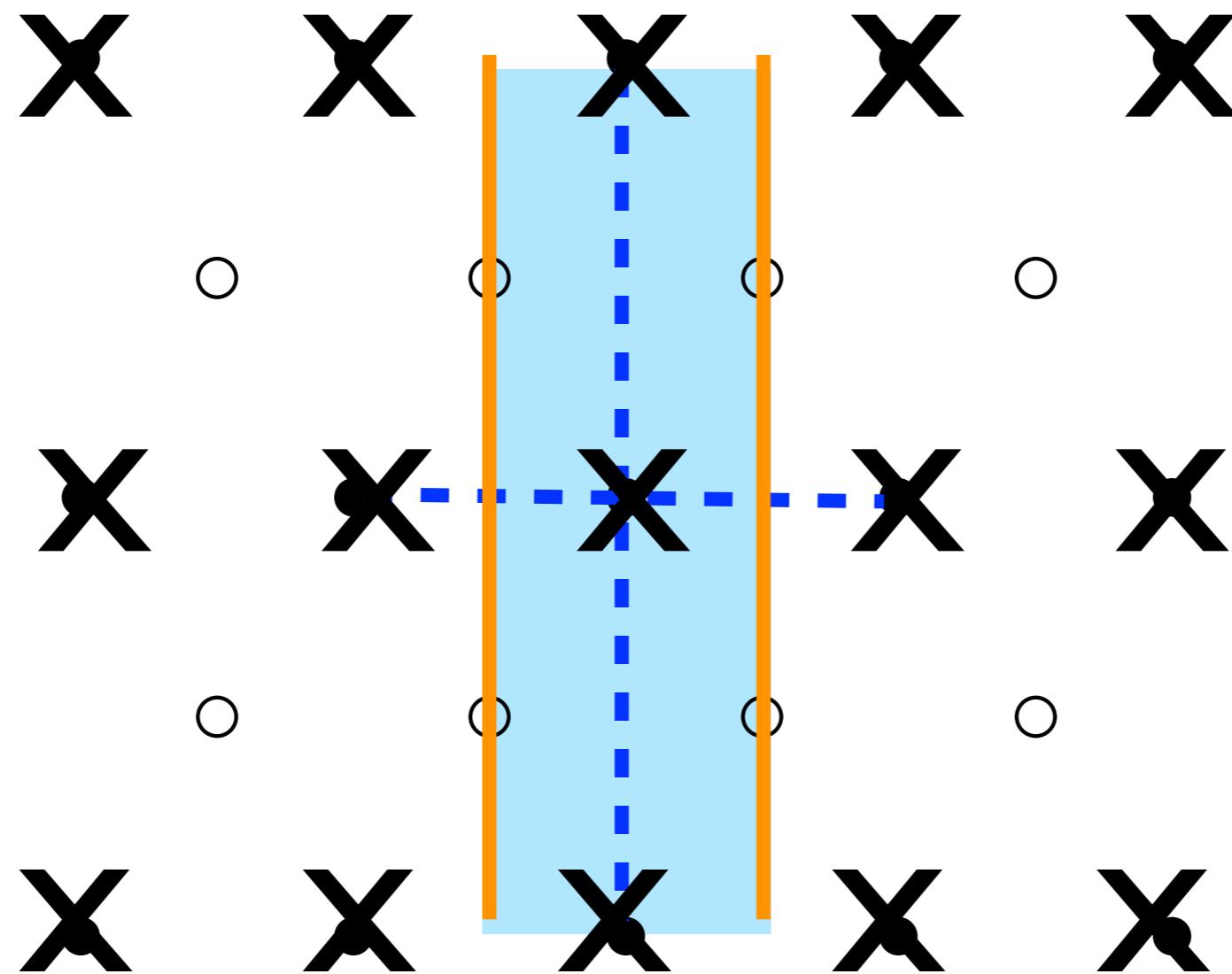
Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell



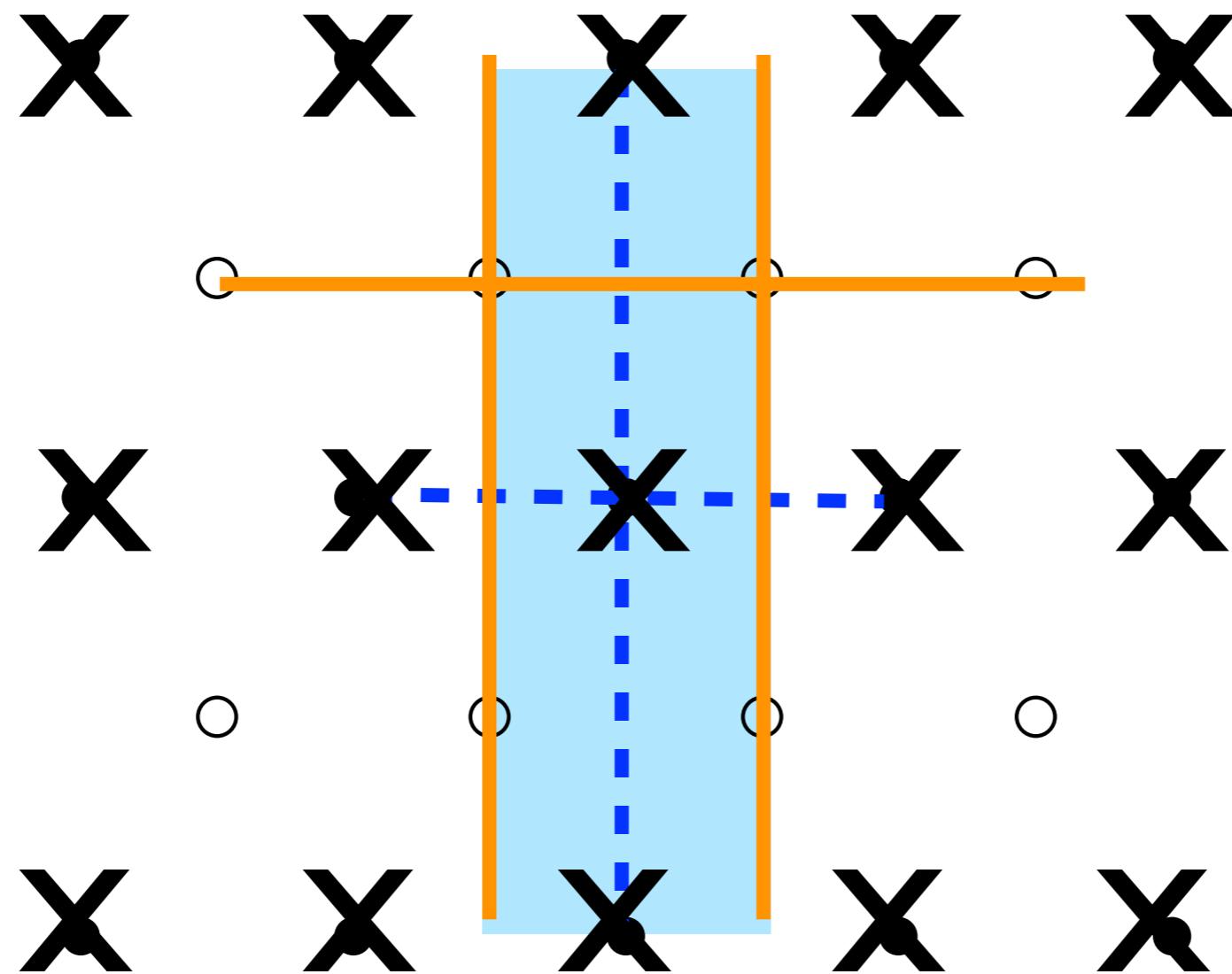
Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell



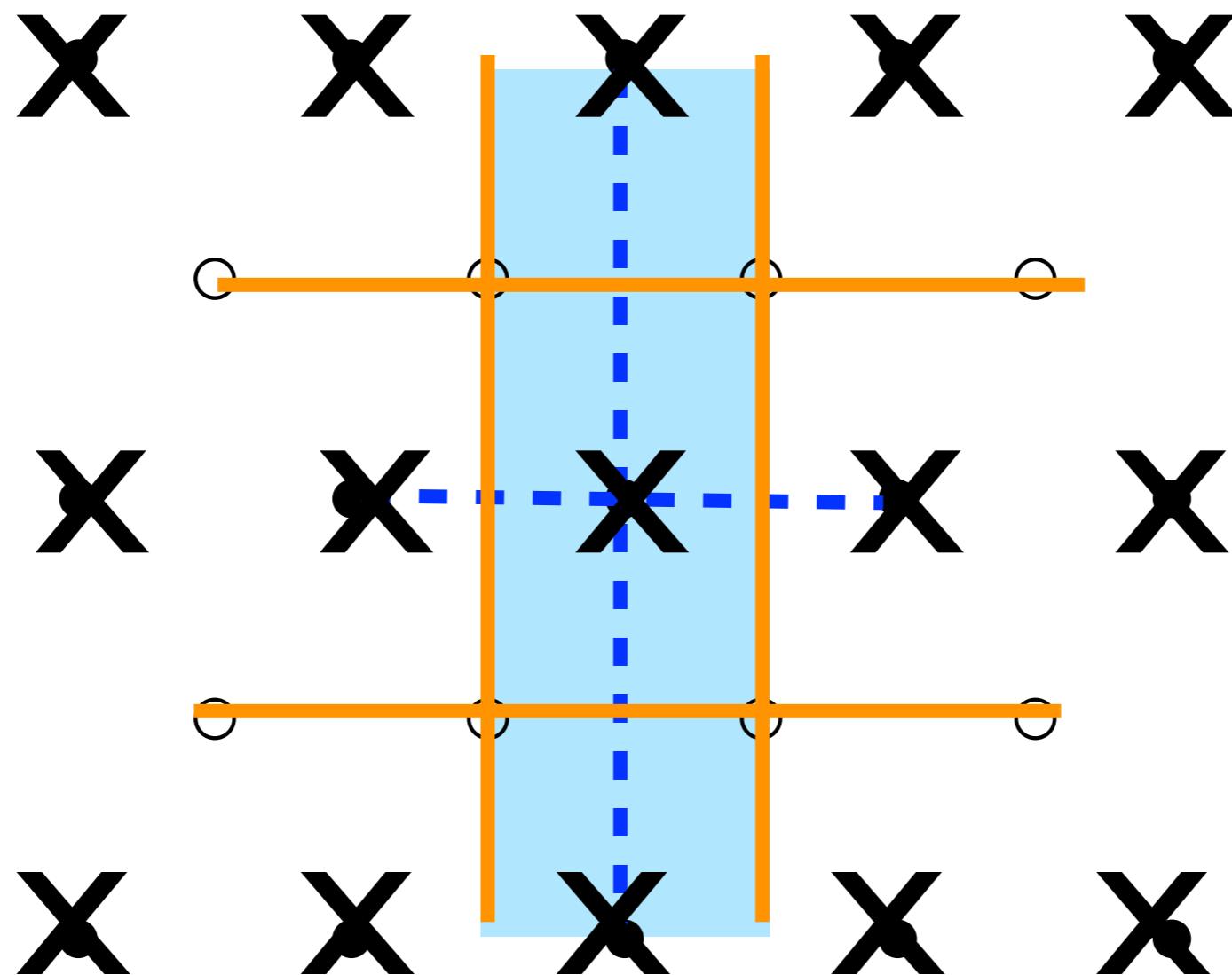
Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell



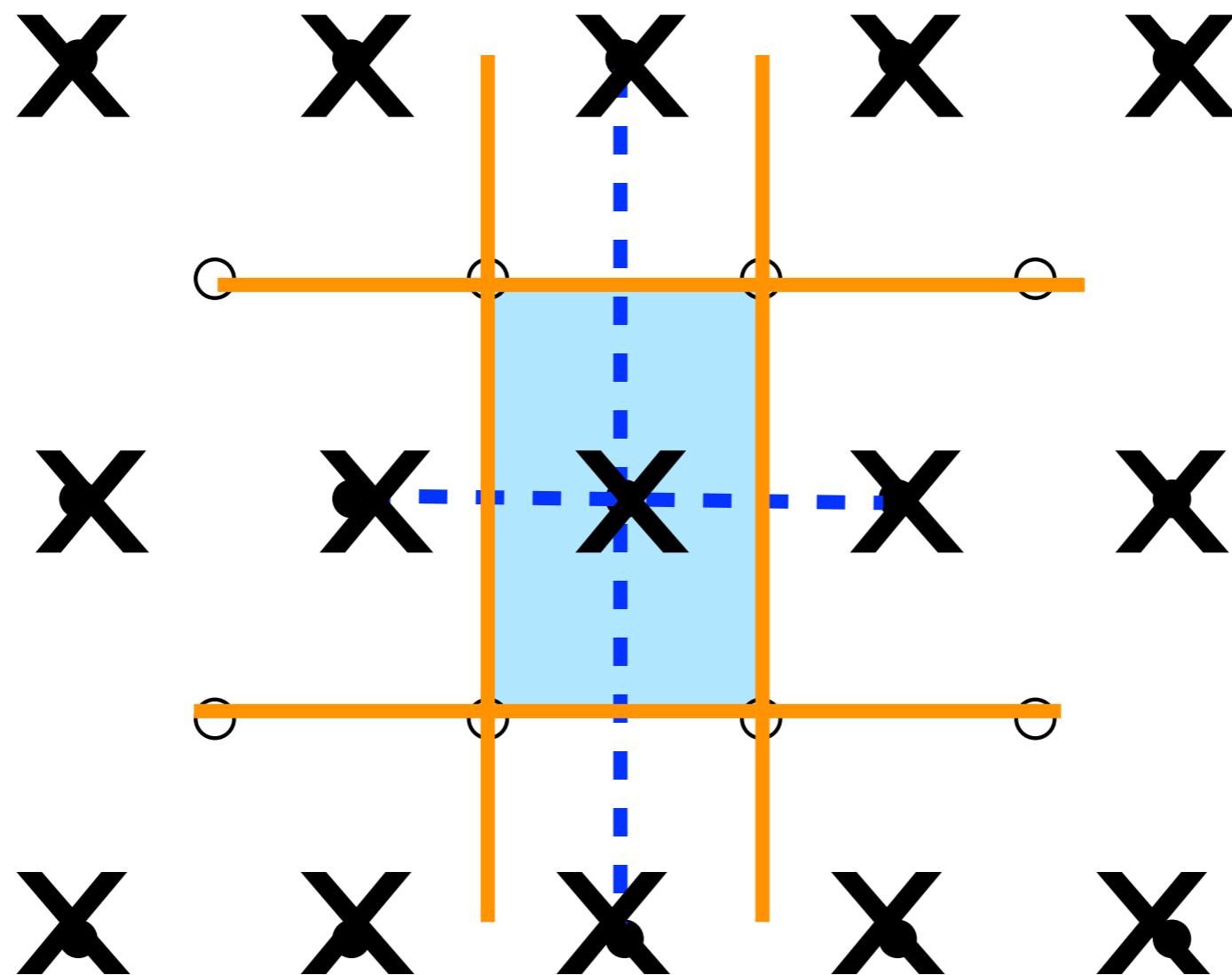
Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell



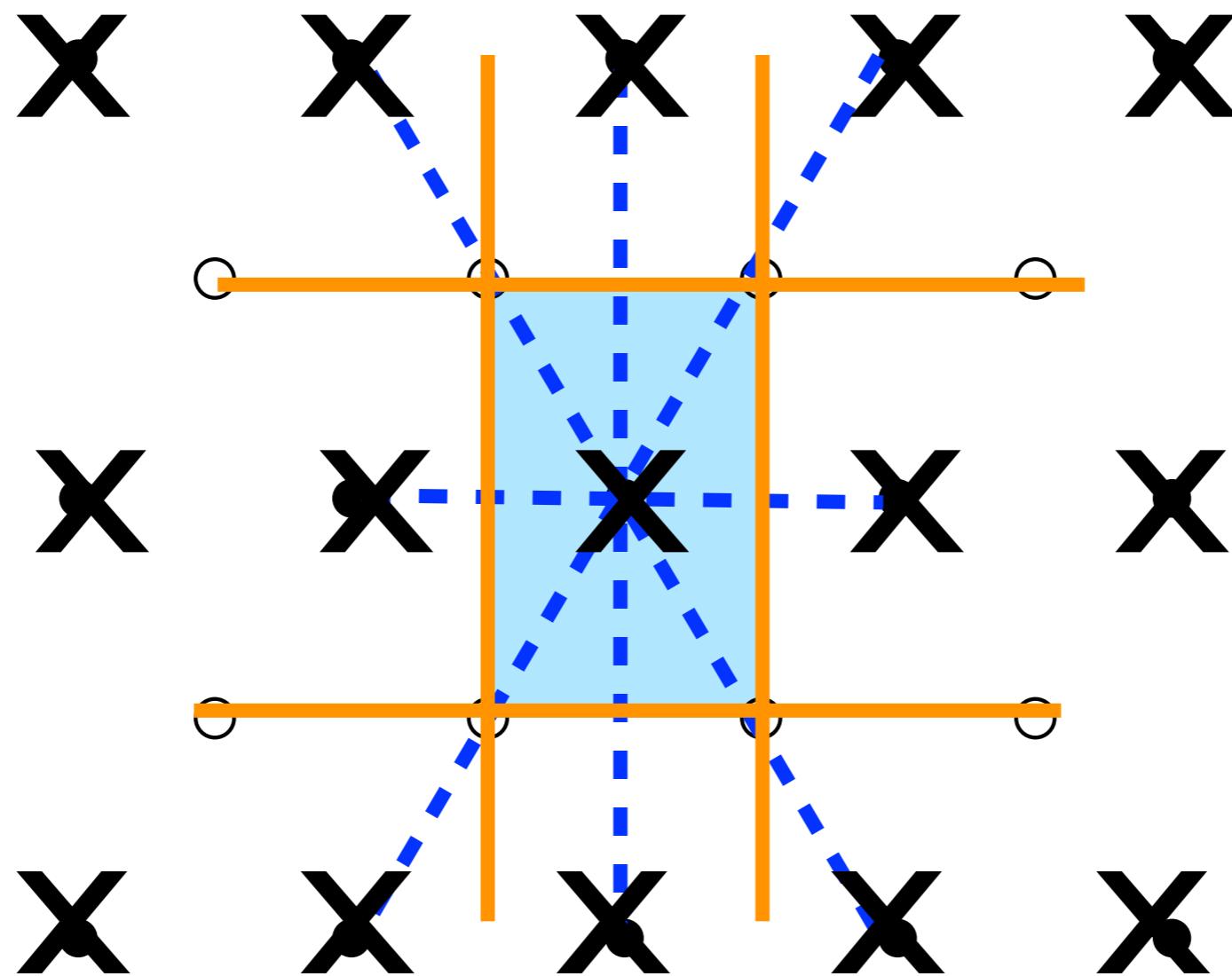
Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell



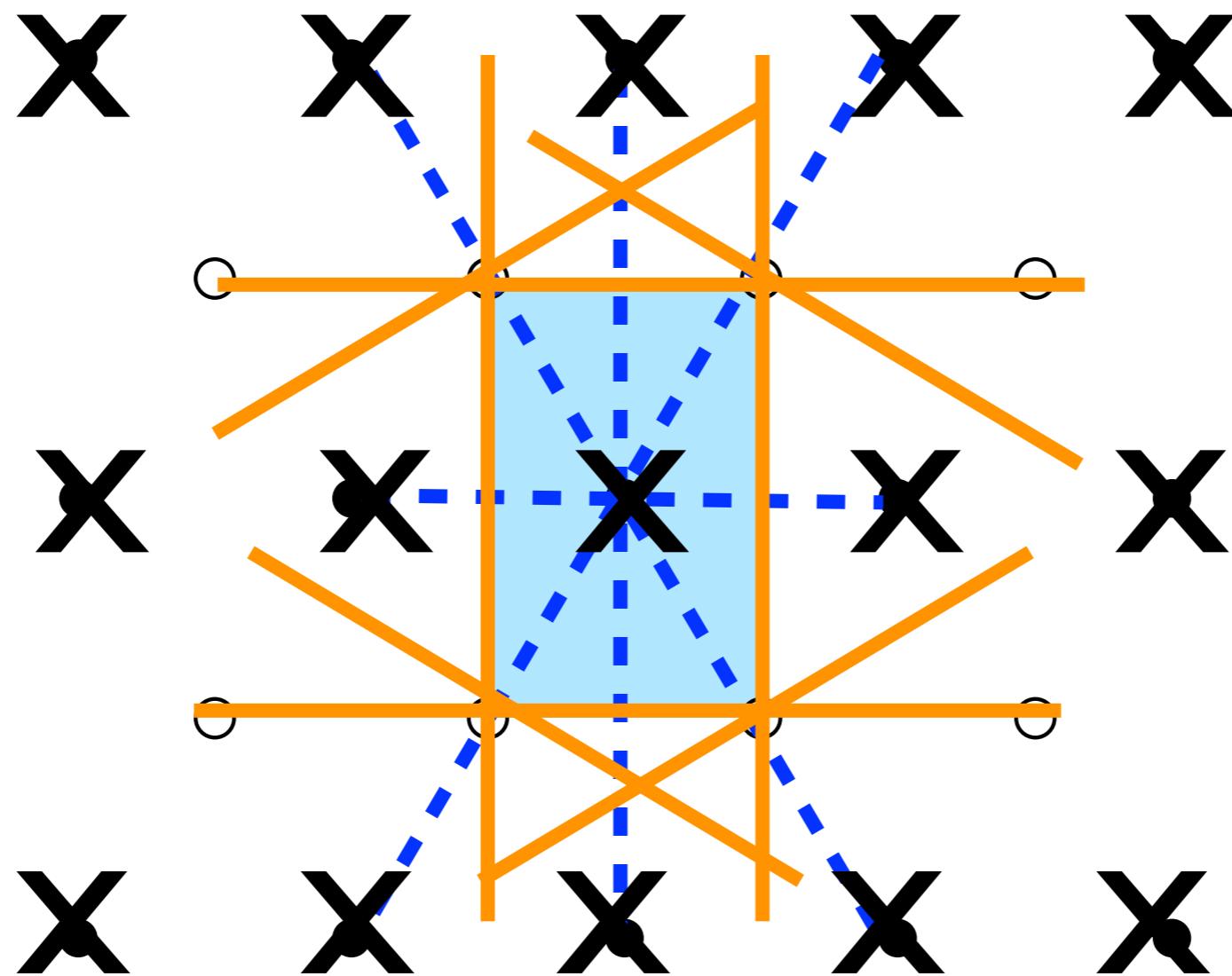
Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell



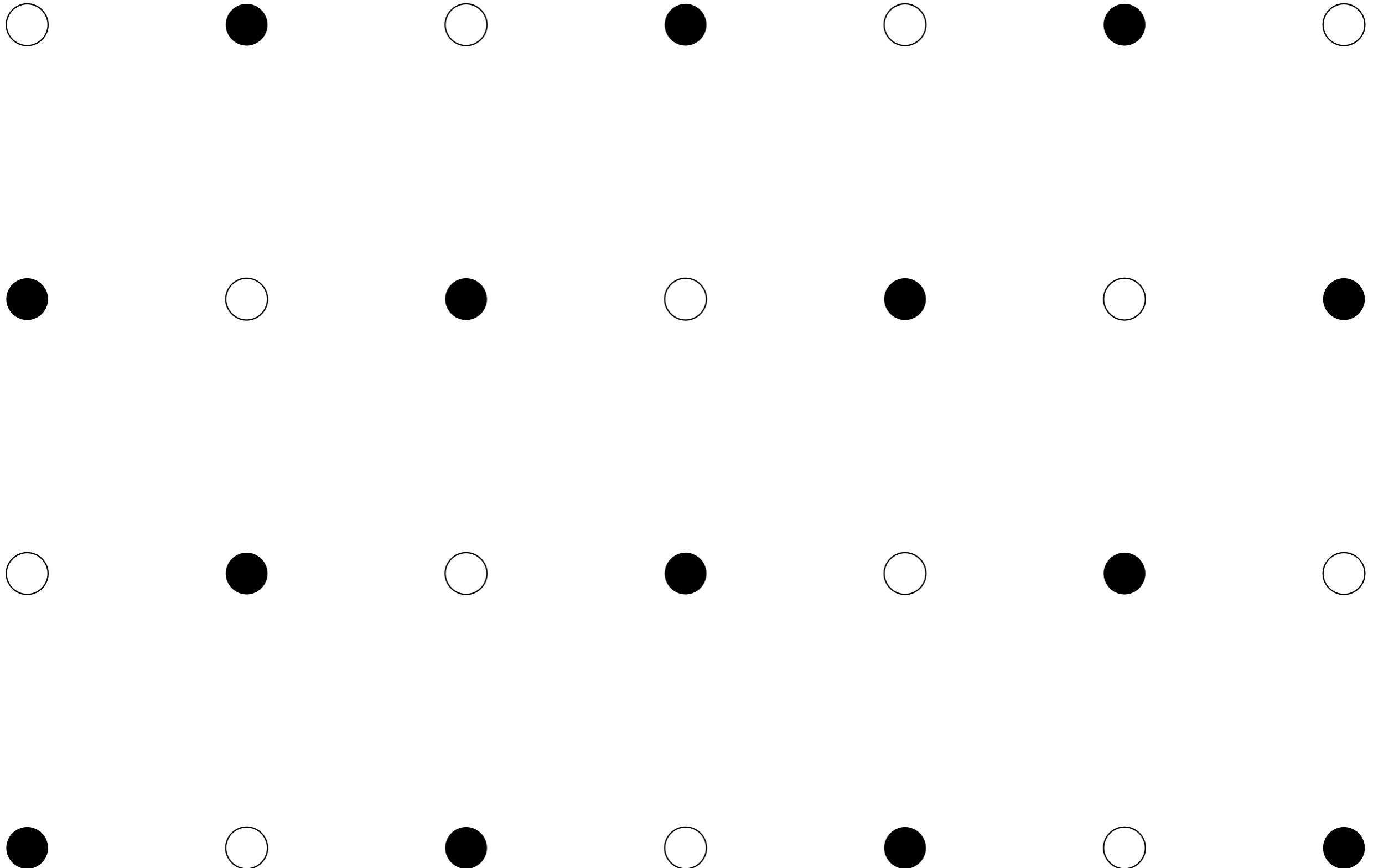
Wigner-Seitz cell practice

- (a) mark a set of Bravais lattice points
- (b) draw a Wigner-Seitz cell

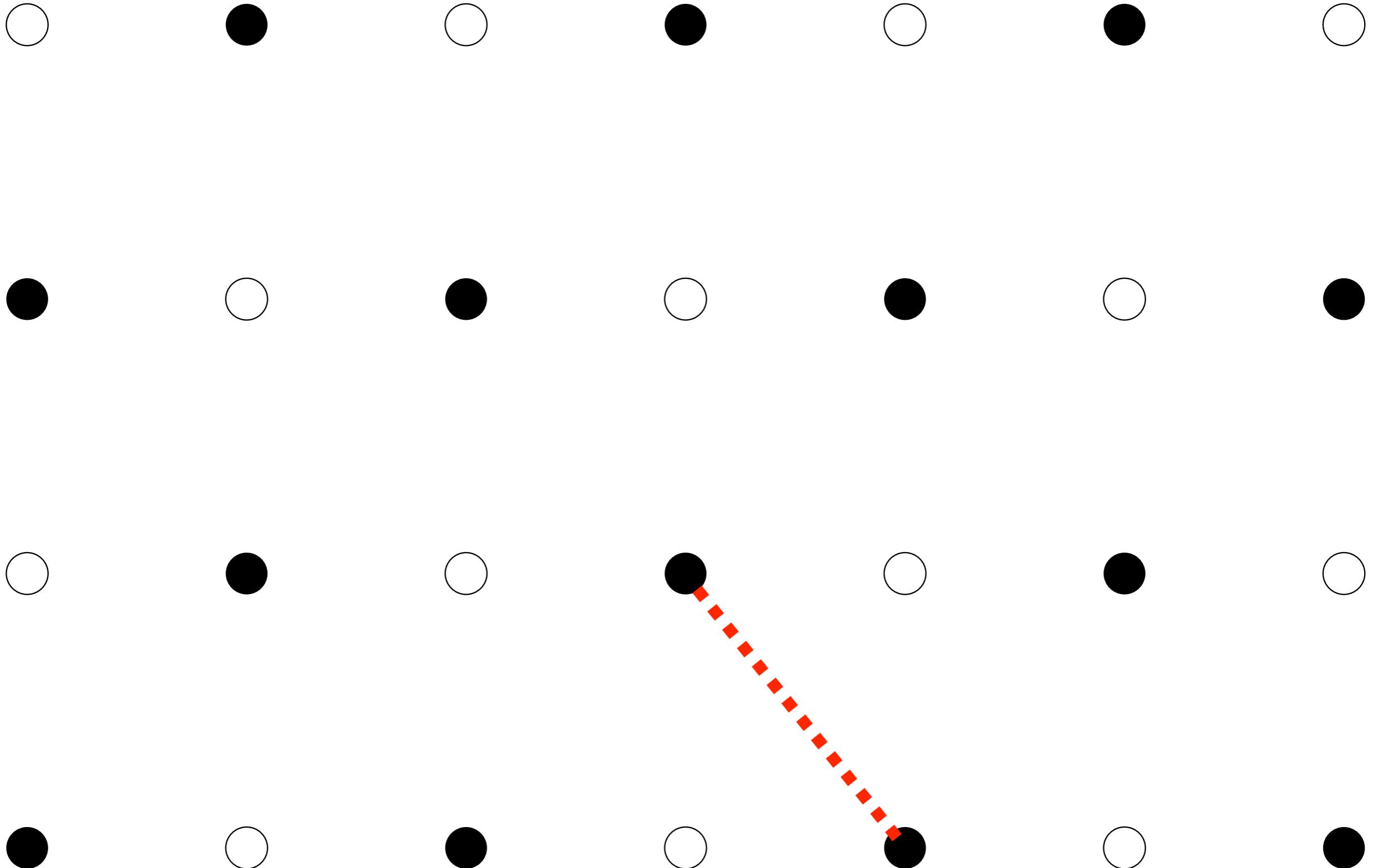


Practice Wigner-Seitz

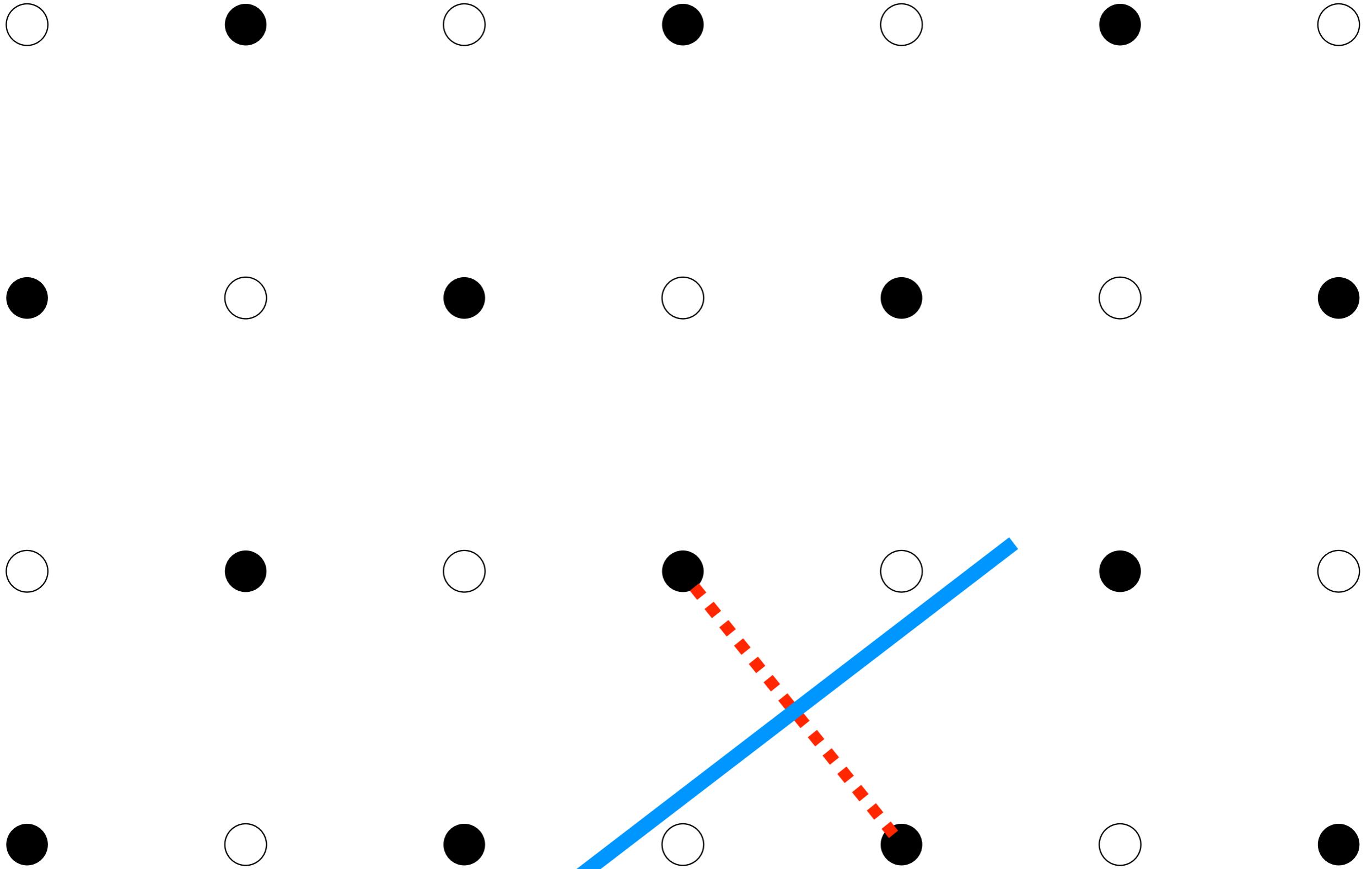
Wigner-Seitz cell



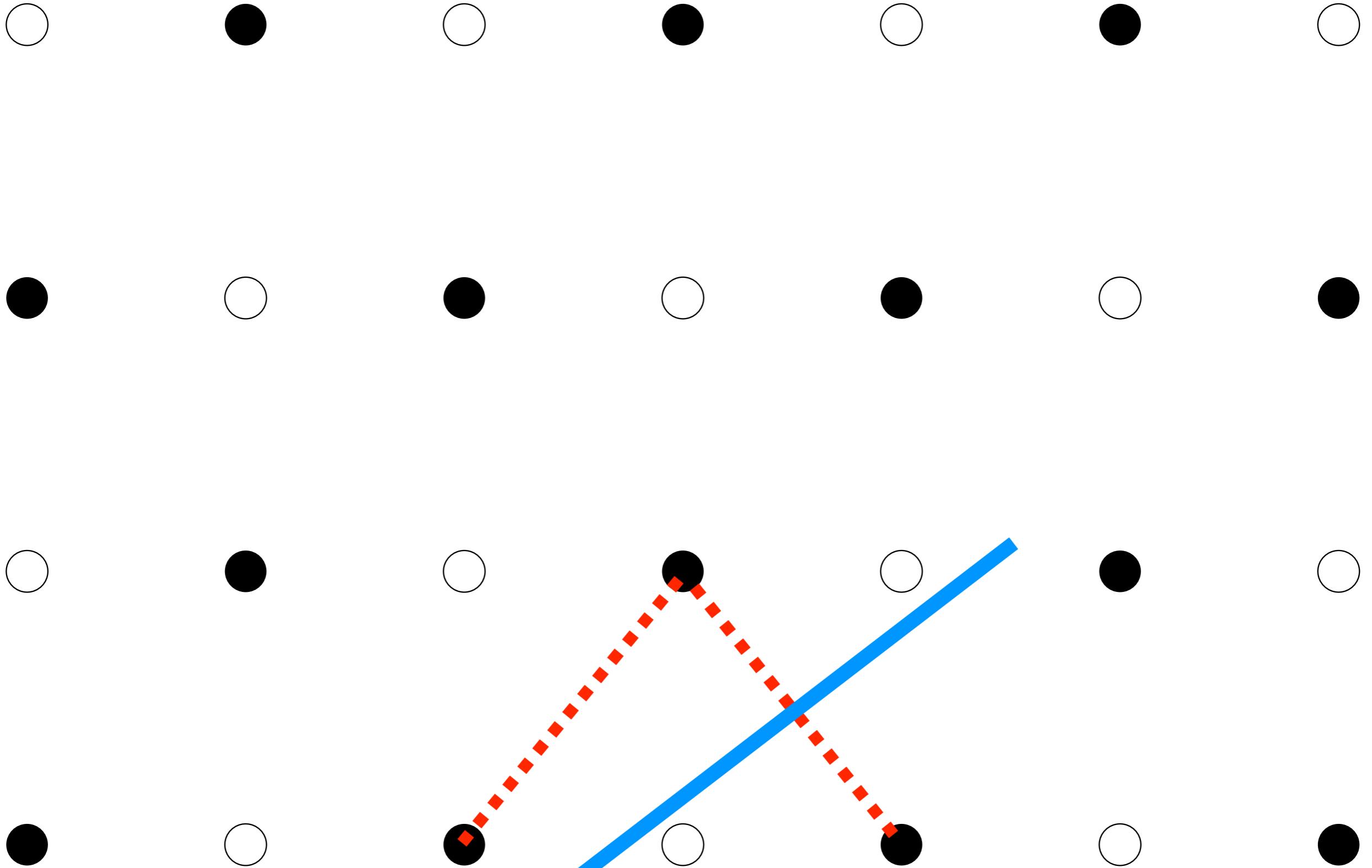
Wigner-Seitz cell



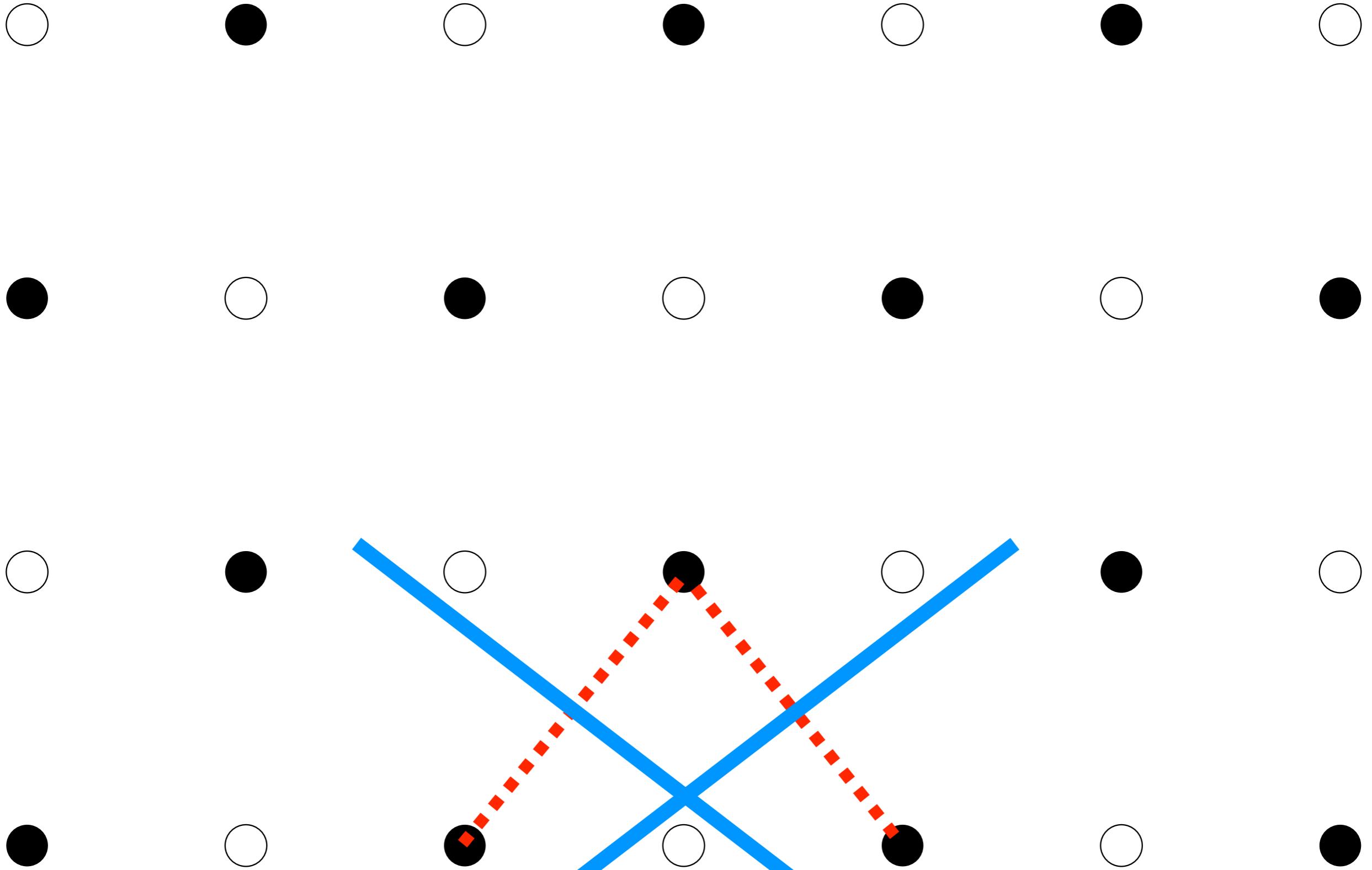
Wigner-Seitz cell



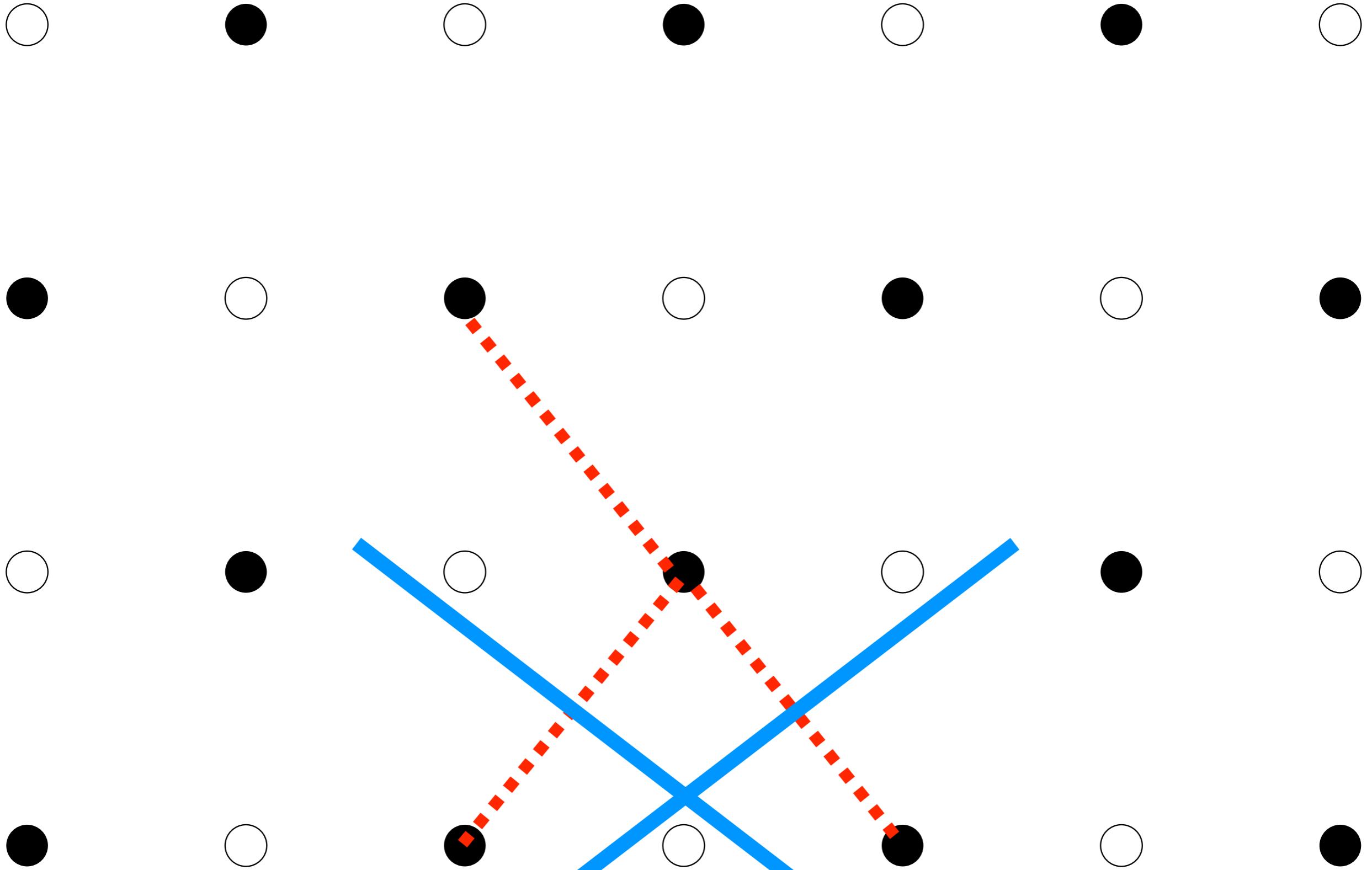
Wigner-Seitz cell



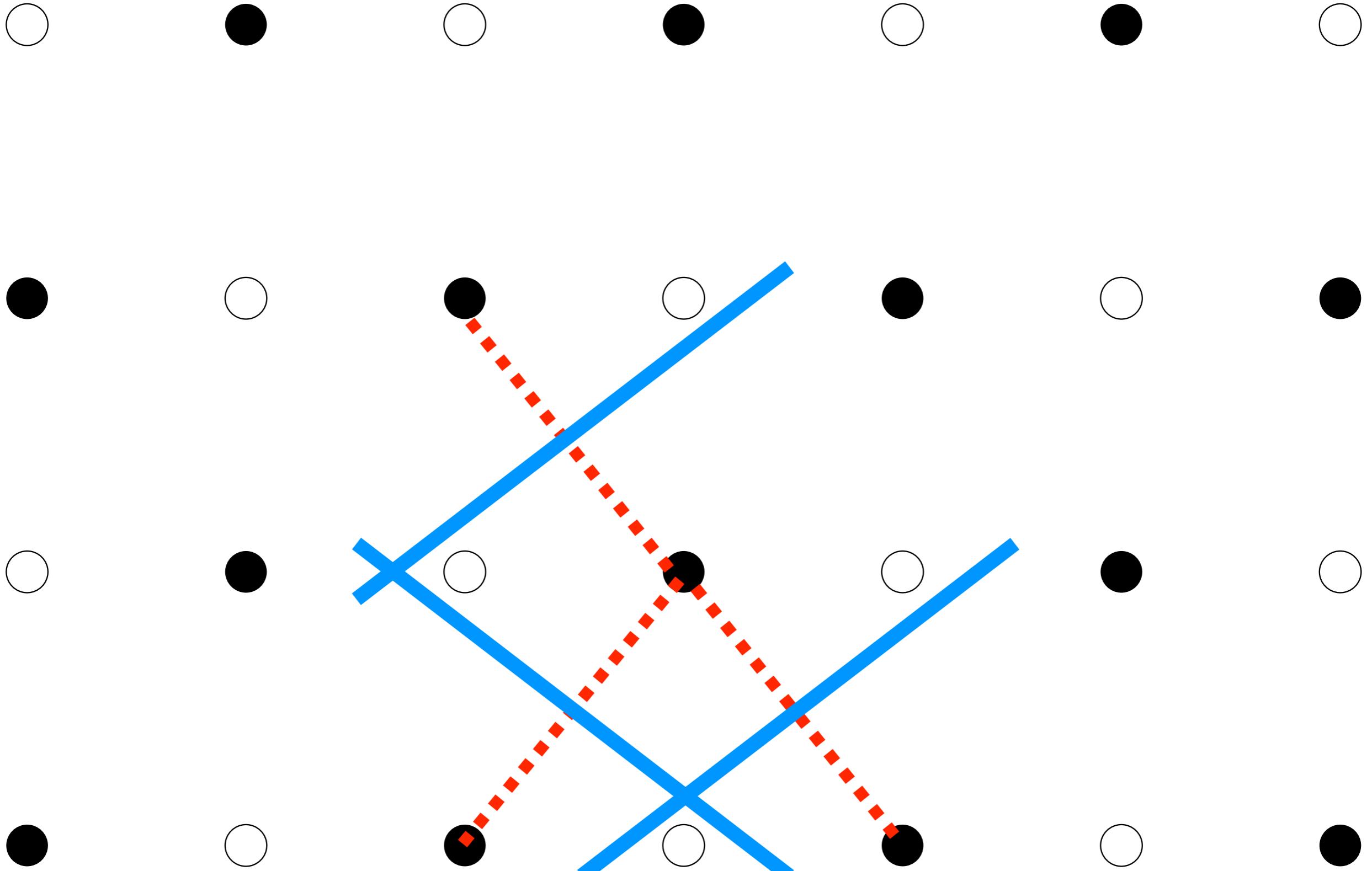
Wigner-Seitz cell



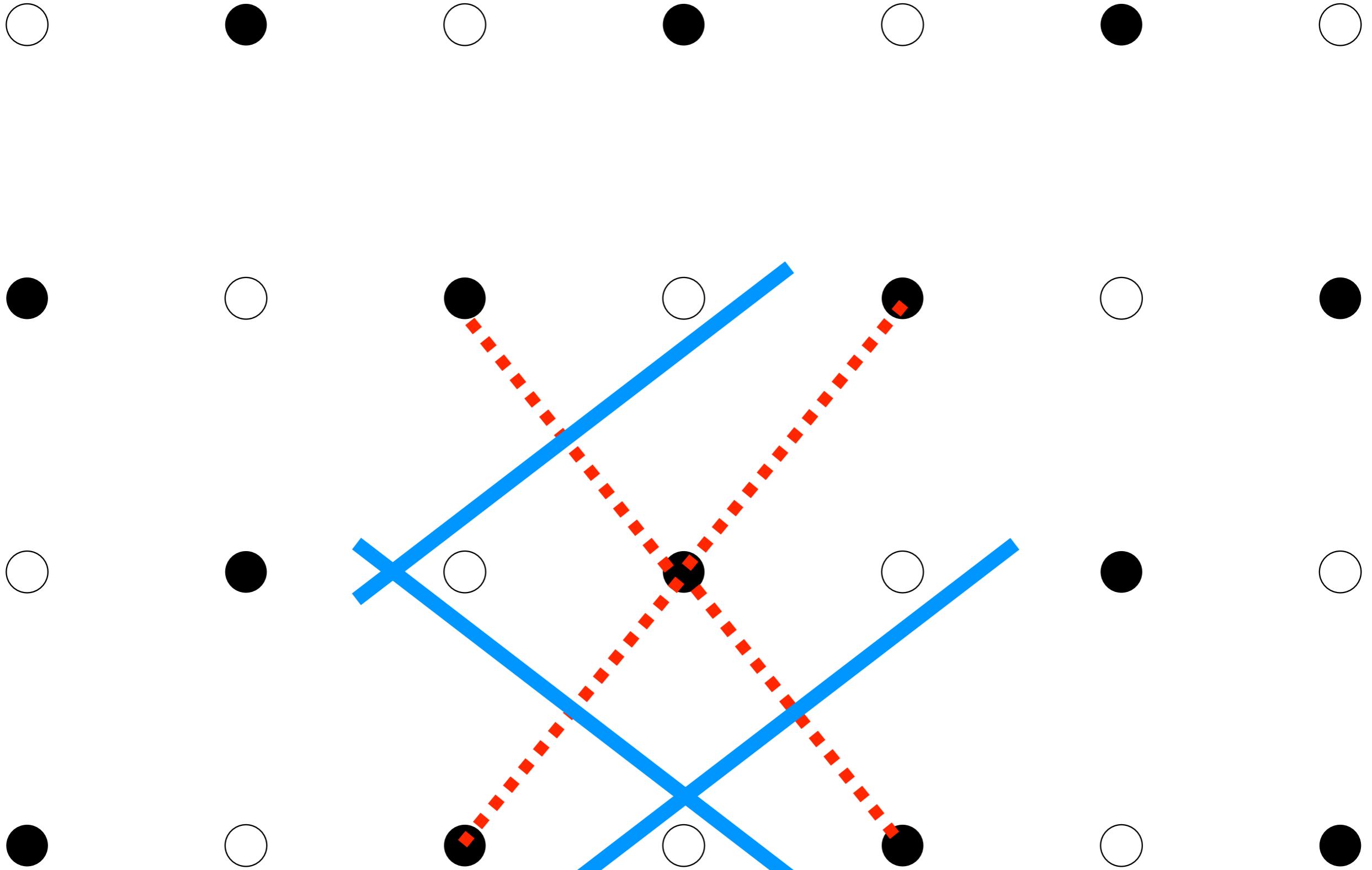
Wigner-Seitz cell



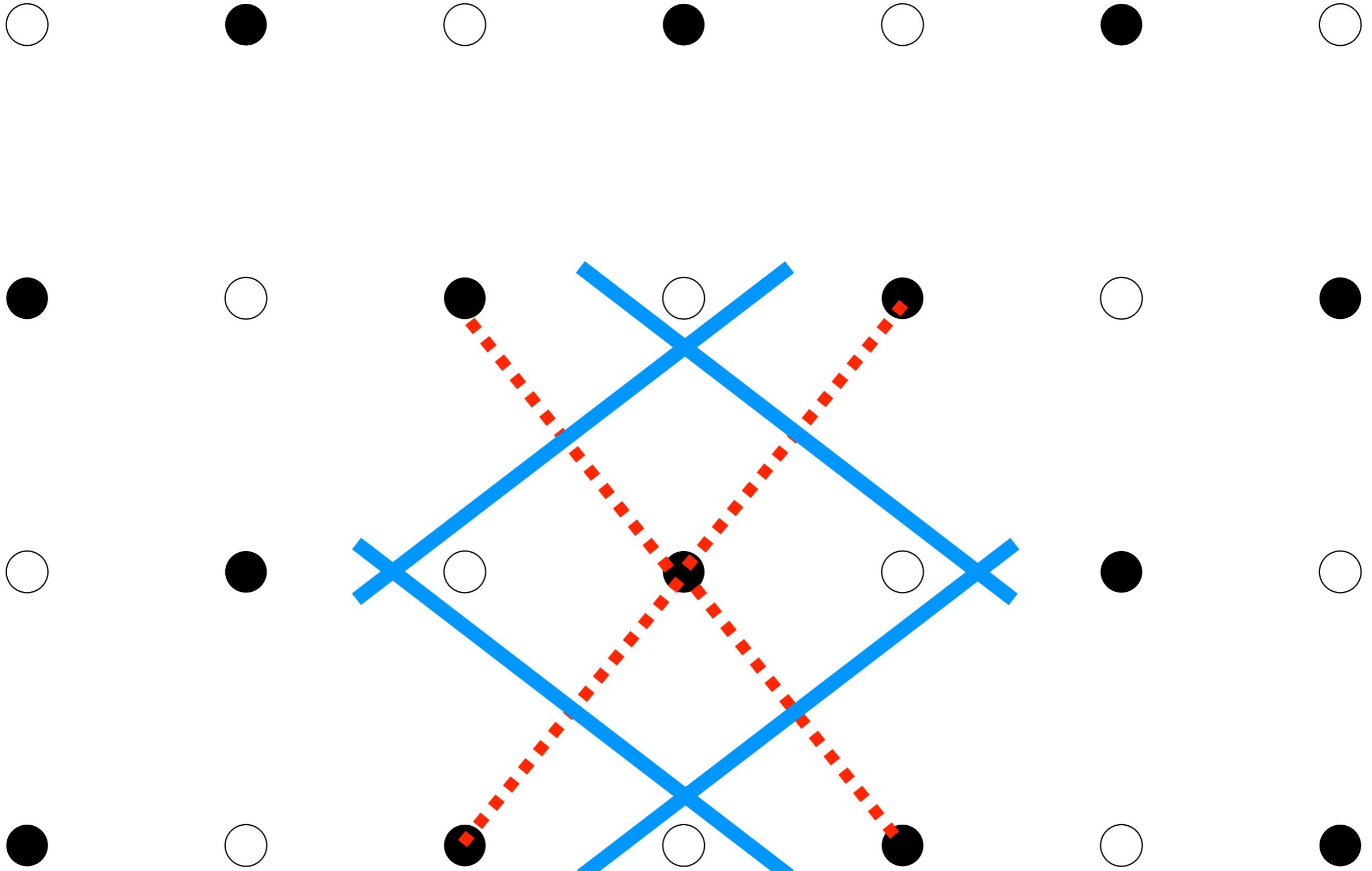
Wigner-Seitz cell



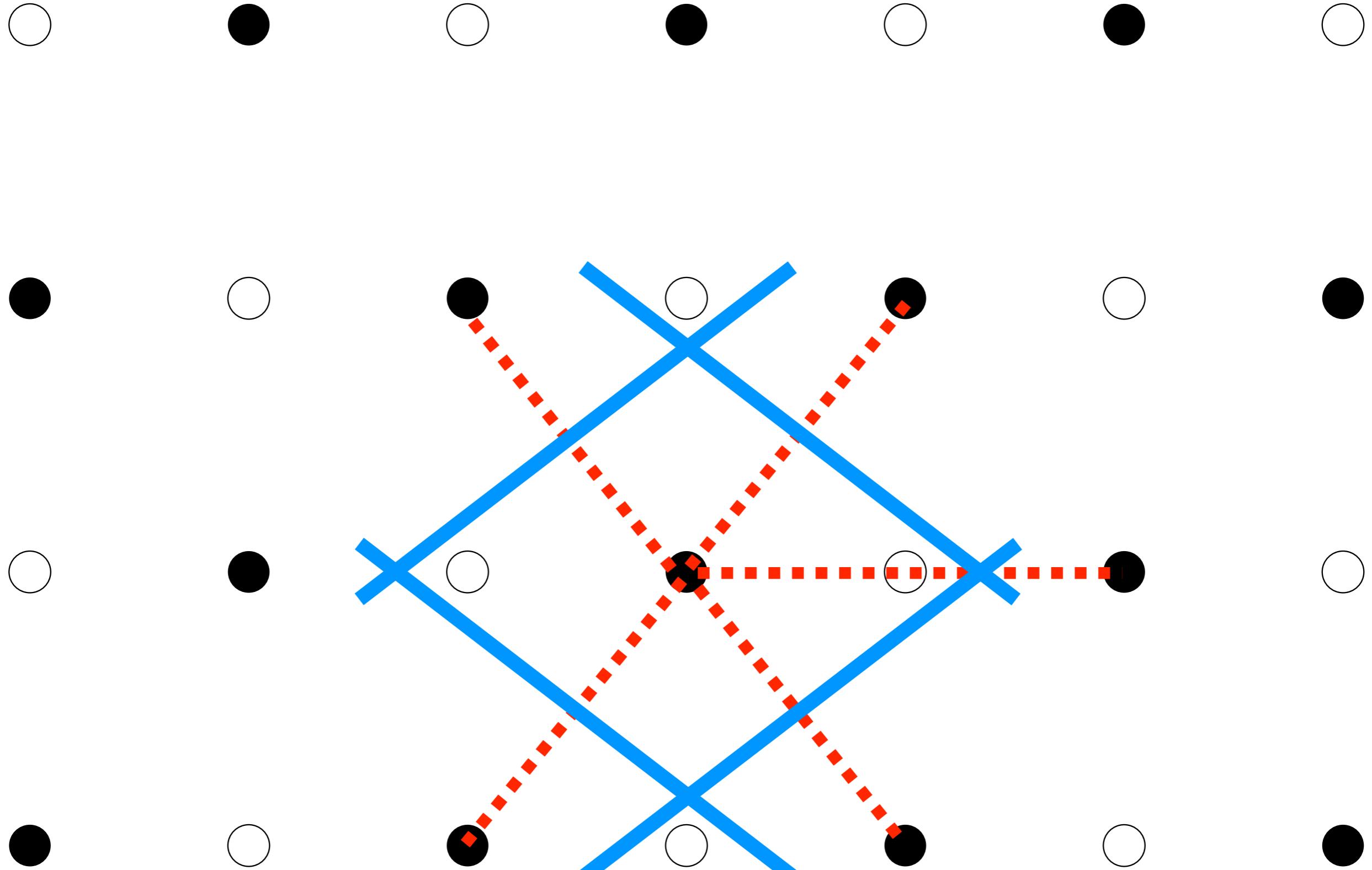
Wigner-Seitz cell



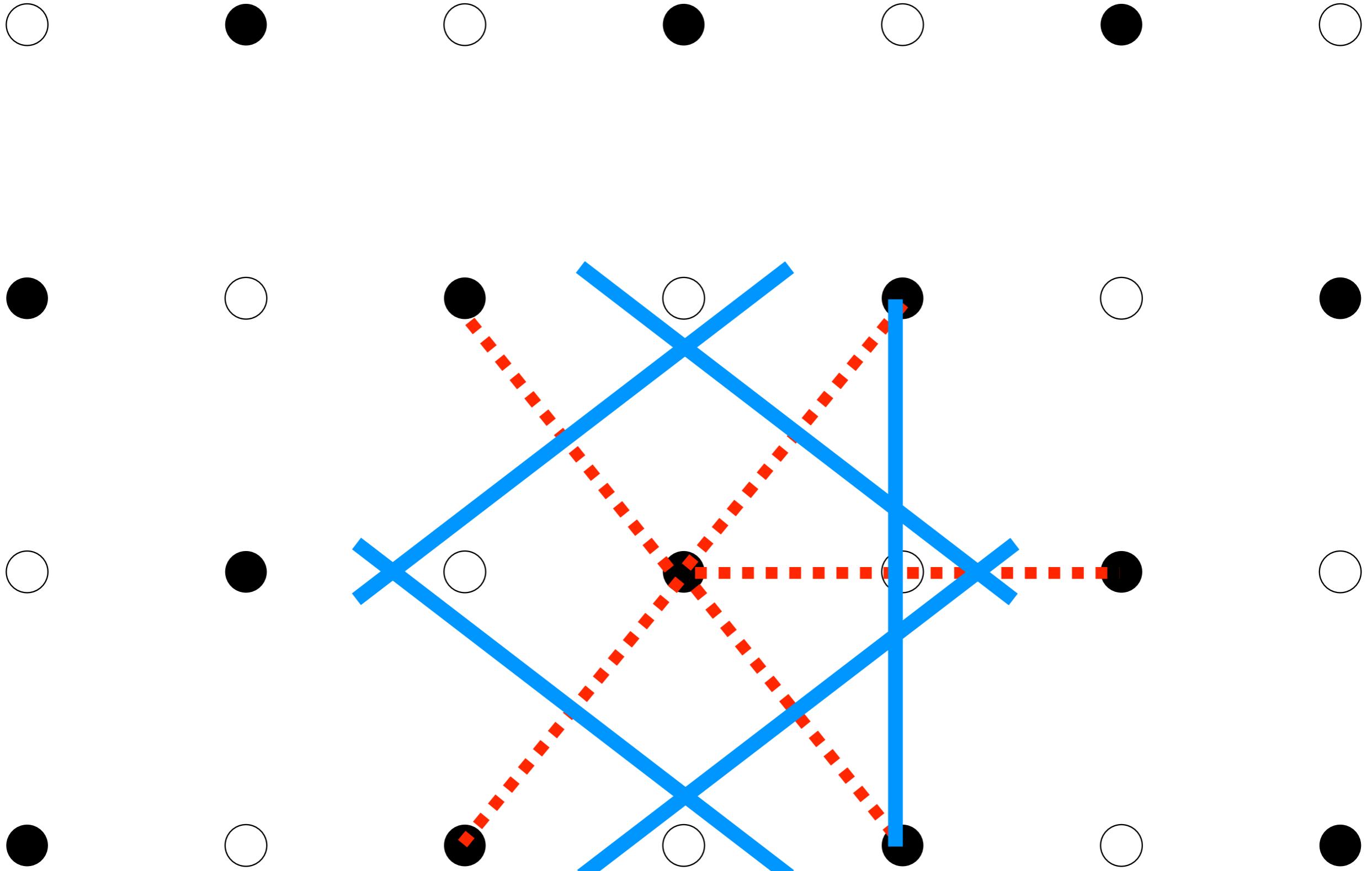
Wigner-Seitz cell



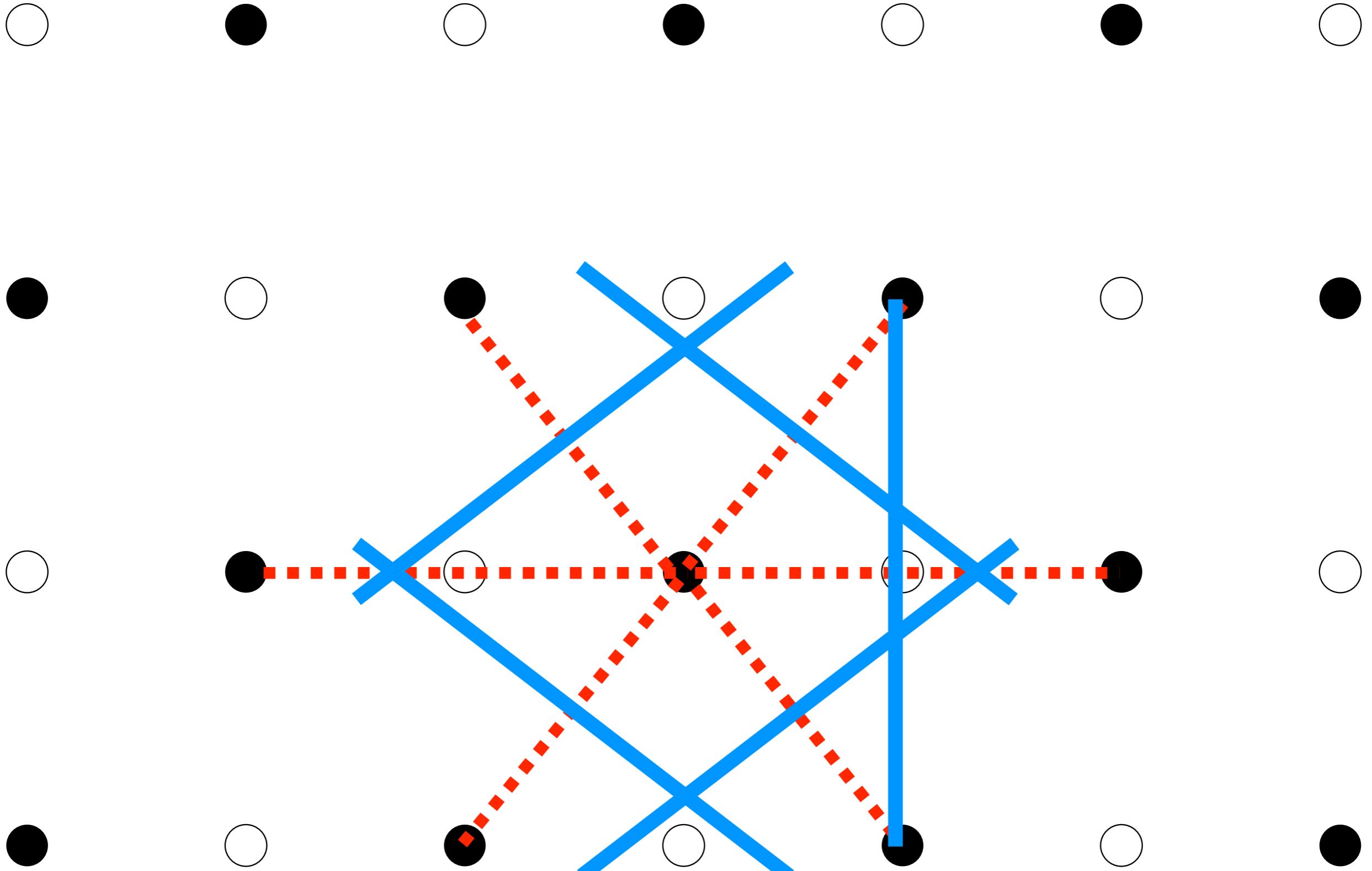
Wigner-Seitz cell



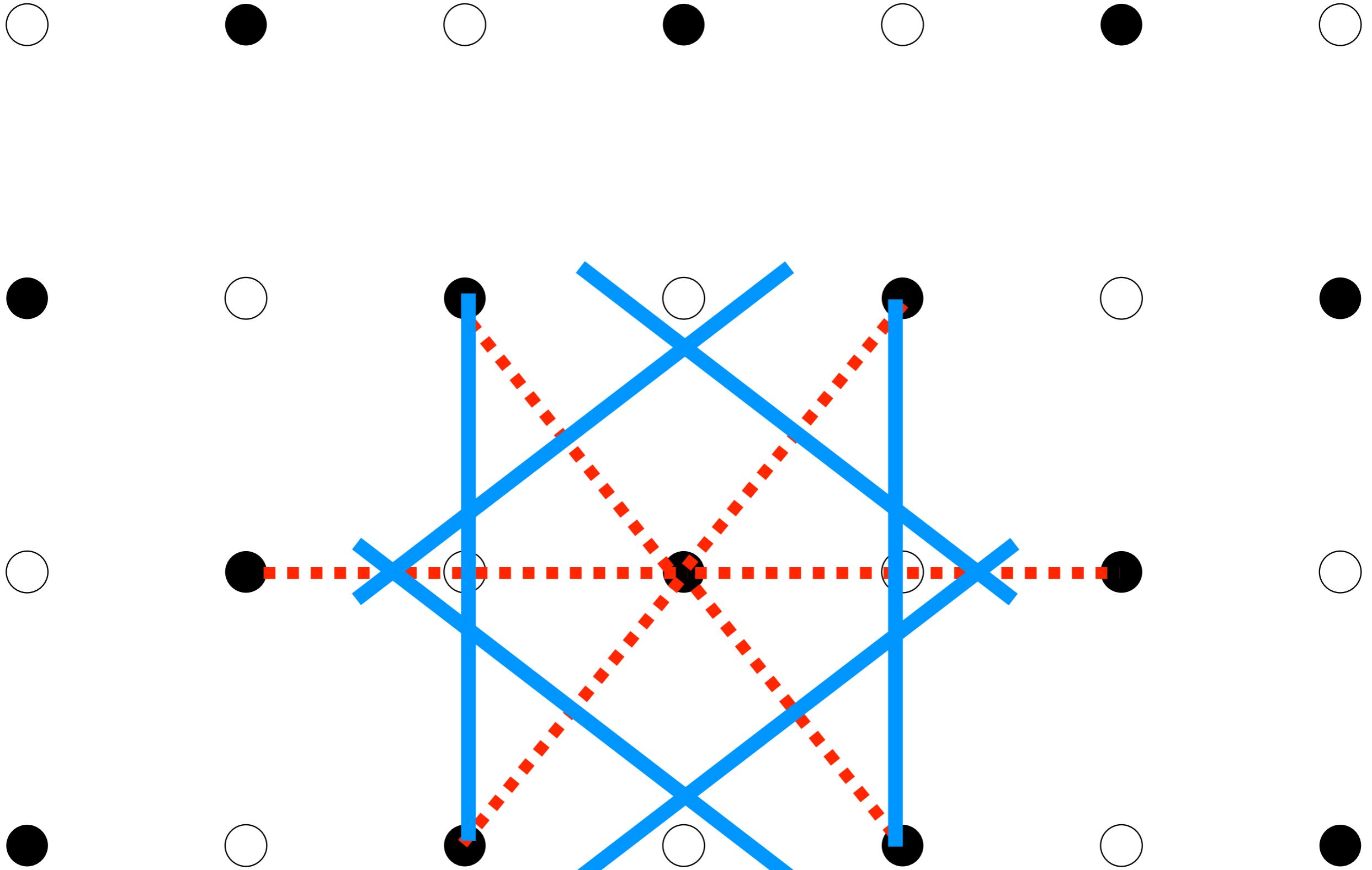
Wigner-Seitz cell



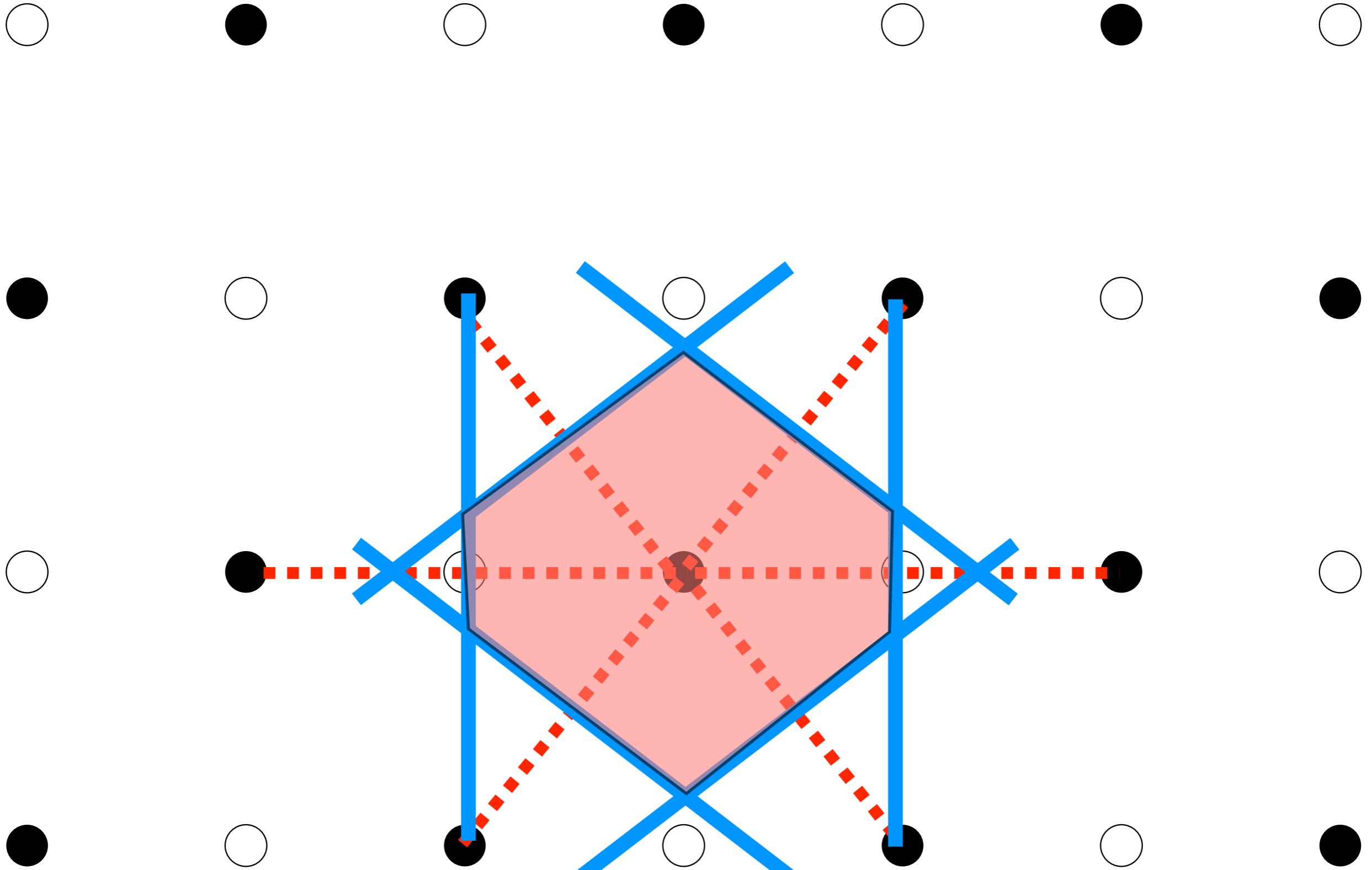
Wigner-Seitz cell



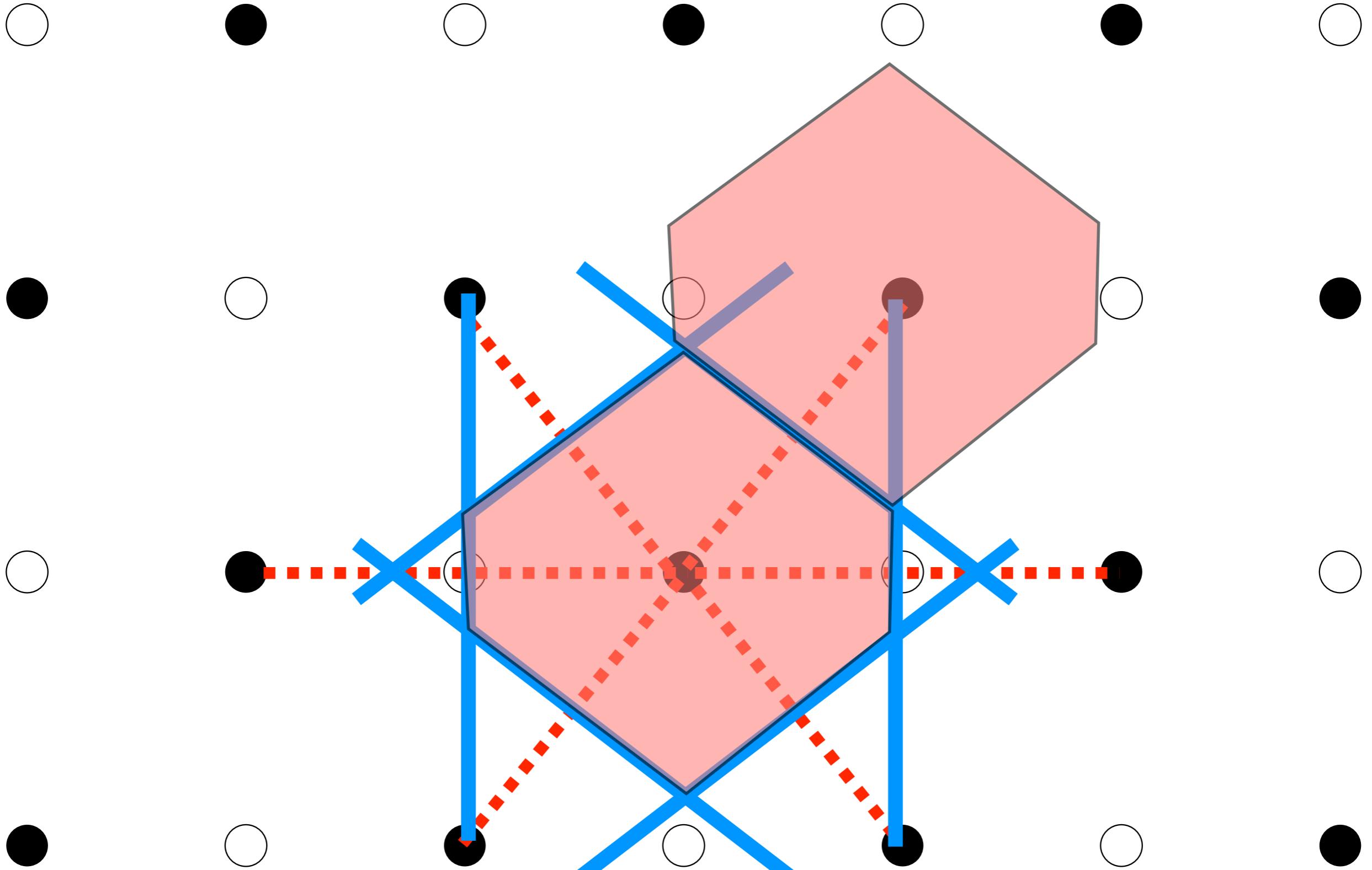
Wigner-Seitz cell



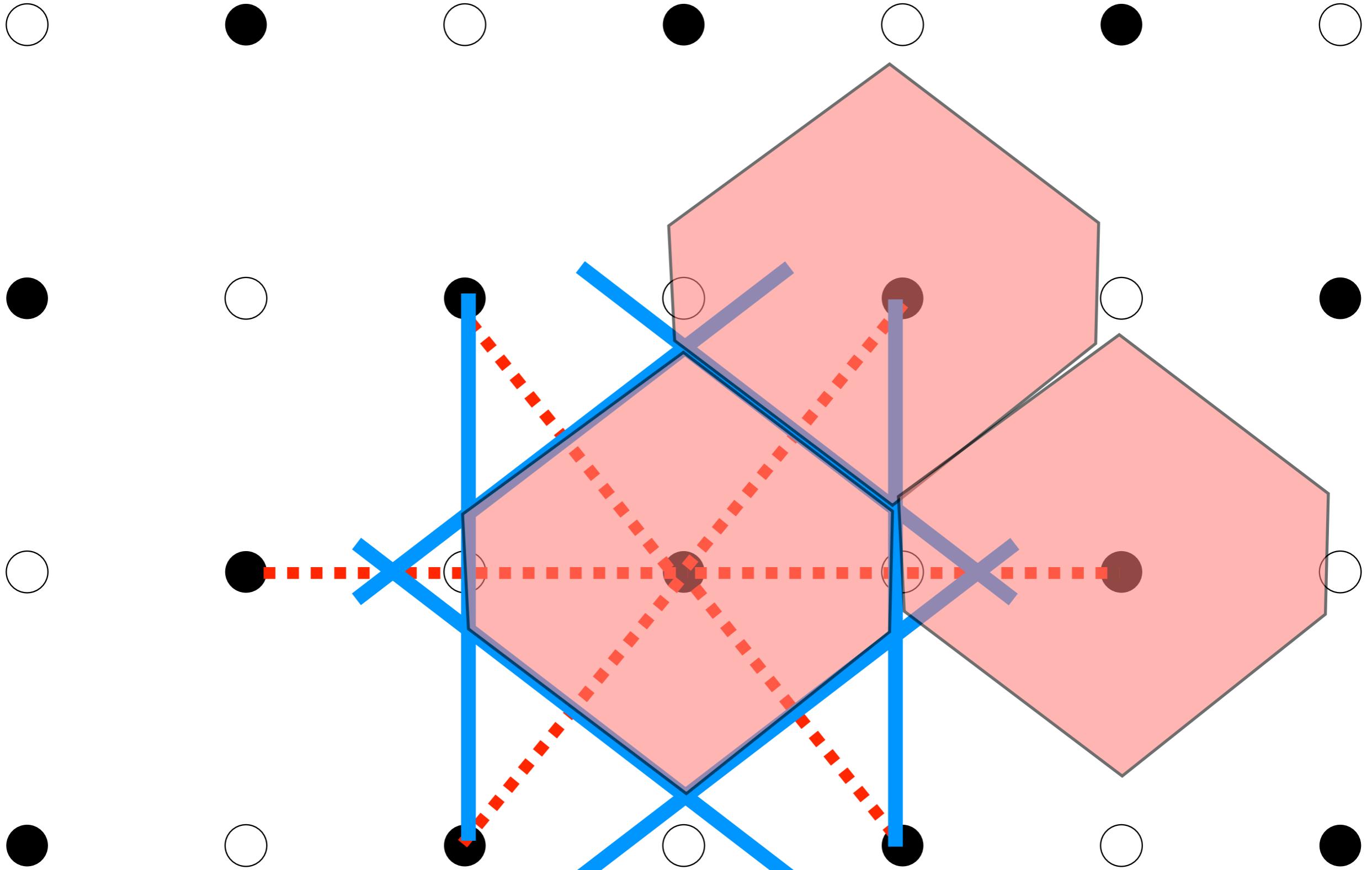
Wigner-Seitz cell

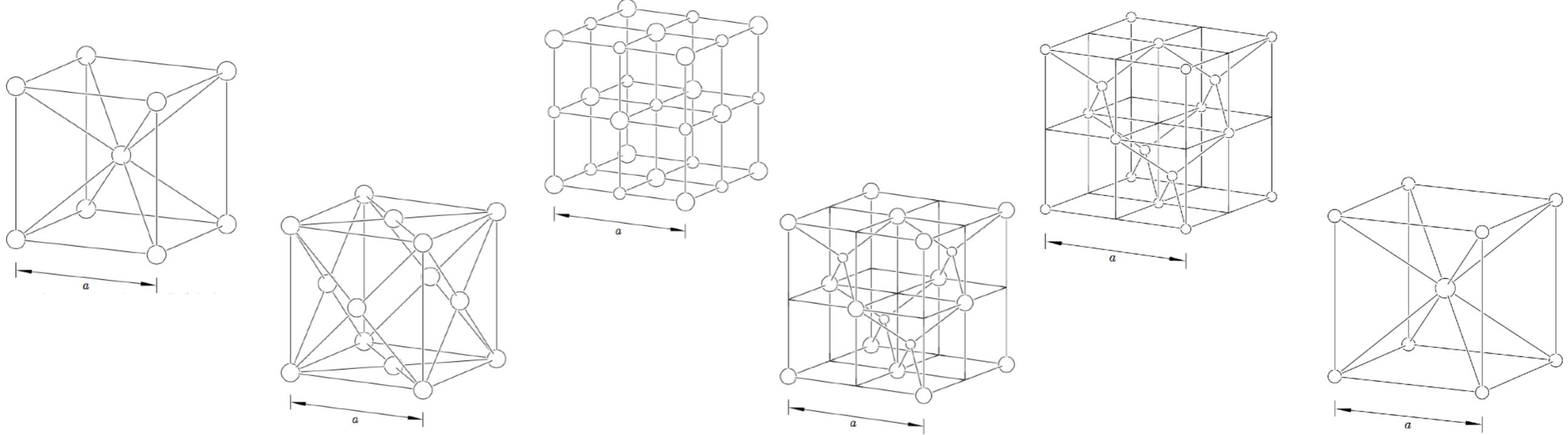


Wigner-Seitz cell

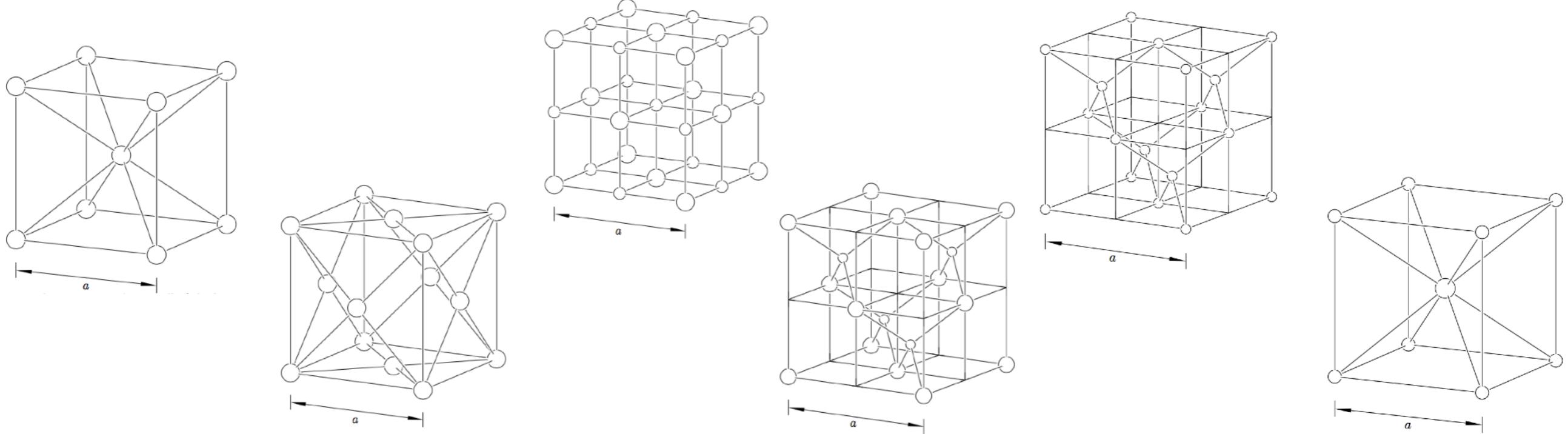


Wigner-Seitz cell





	NaCl	CsCl	ZnS	C	Al
Lattice type					
# of atoms per conv. cell					
# of atoms per WS cell					



	NaCl	CsCl	ZnS	C	Al
Lattice type	fcc	sc	fcc	fcc	fcc
# of atoms per conv. cell	8	2	8	8	4
# of atoms per WS cell	2	2	2	2	1