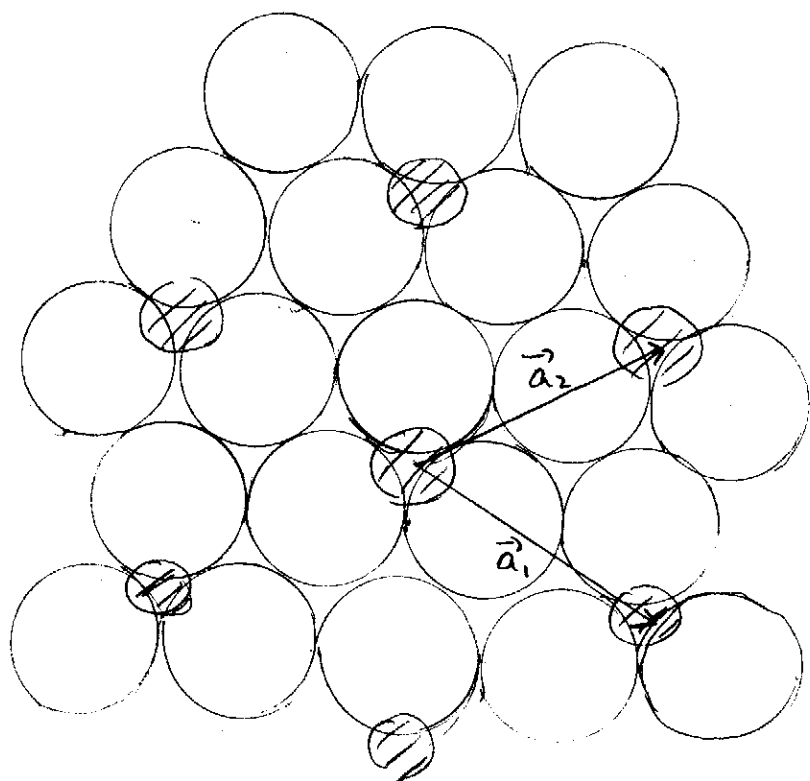


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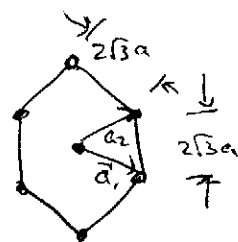


T

$$4a \cos 30^\circ = 2\sqrt{3}a$$

↓

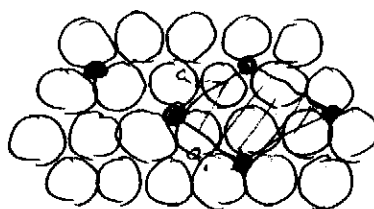
There are many choices. One way is to focus your eyes on the black atoms, which form a hexagonal structure.



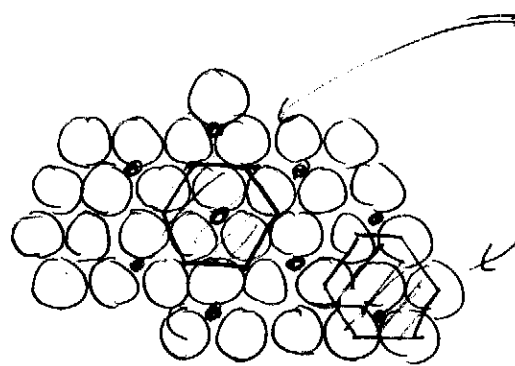
length of  $\vec{a}_1$  = length of  $\vec{a}_2 = 2\sqrt{3}a$

$$\text{area} = (2\sqrt{3}a)^2 \cdot \sin 60^\circ = 4 \times 3 a^2 \cdot \frac{\sqrt{3}}{2} = 6\sqrt{3}a^2$$

possible unit cell :



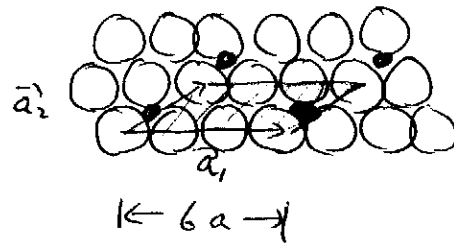
Other possible choices:



these are two  
non-equivalent  
choices

[ shifted with  
respect to  
each other ]

i.e. different choices



$$2a \sin 60^\circ = \sqrt{3}a$$

$$\text{area} = (6a)(\sqrt{3}a) = 6\sqrt{3}a^2$$

three white atoms per unit cell

[ one black per unit cell ]