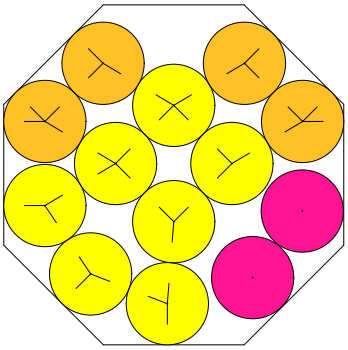
N = 13

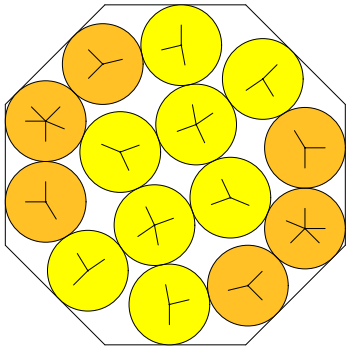
13 circles in an octagon



radius = 0.223537235211 density = 0.721519348455
ratio = 4.473527638717 contacts = 23

N = 14

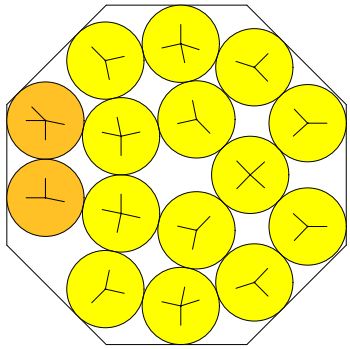
14 circles in an octagon



radius = 0.219348902644 density = 0.748176127867
ratio = 4.558946901236 contacts = 30

N = 15

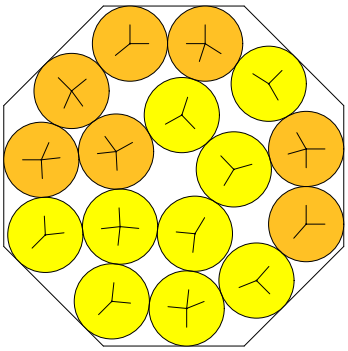
15 circles in an octagon



radius = 0.210236890635 density = 0.736400352696
ratio = 4.756539144872 contacts = 31

N = 16

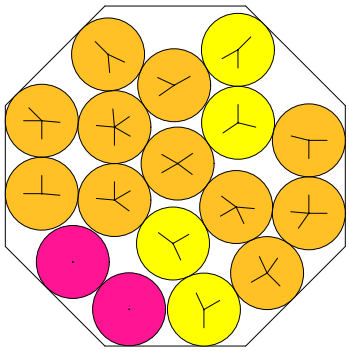
16 circles in an octagon



radius = 0.204286601358 density = 0.741659609991
ratio = 4.895083639127 contacts = 33

N = 17

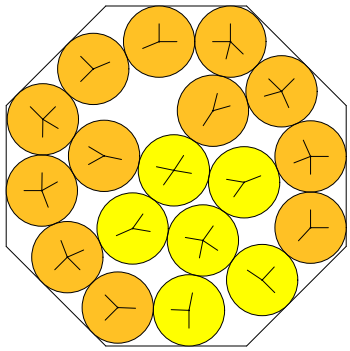
17 circles in an octagon



radius = 0.198194125496 density = 0.741712086622
ratio = 5.045558224793 contacts = 31

N = 18

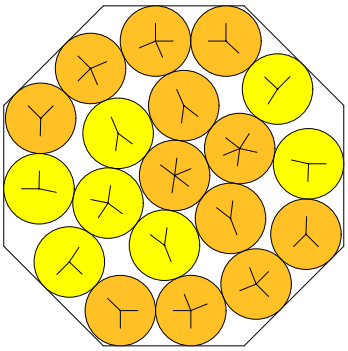
18 circles in an octagon



radius = 0.193696359493 density = 0.750101960981
ratio = 5.162719643361 contacts = 37

N = 19

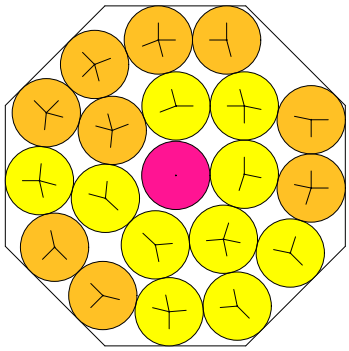
19 circles in an octagon



radius = 0.191508243904 density = 0.773986575243
ratio = 5.221707325056 contacts = 39

N = 20

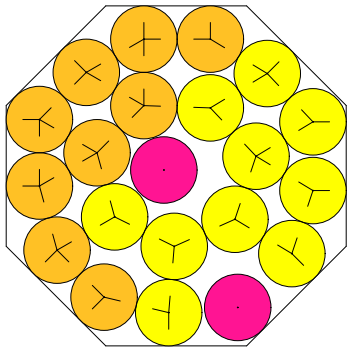
20 circles in an octagon



radius = 0.185530744908 density = 0.764656969740
ratio = 5.389942246486 contacts = 39

N = 21

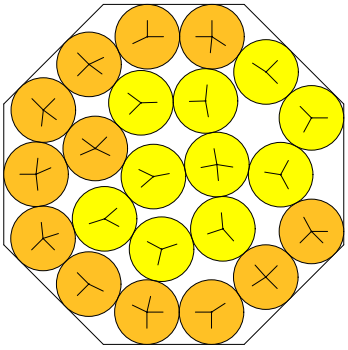
21 circles in an octagon



radius = 0.180670260259 density = 0.761373074646
ratio = 5.534945256425 contacts = 39

N = 22

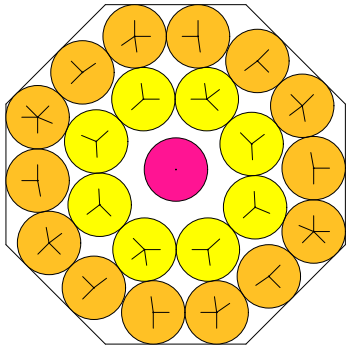
22 circles in an octagon



radius = 0.175500940767 density = 0.752638547652
ratio = 5.697975154043 contacts = 45

N = 23

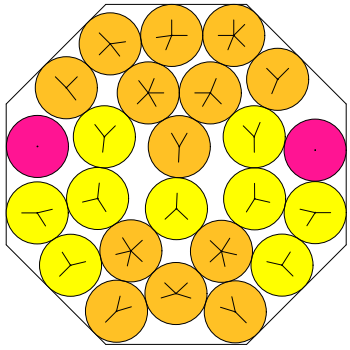
23 circles in an octagon



radius = 0.172561559662 density = 0.760712985857
ratio = 5.795033389580 contacts = 46

N = 24

24 circles in an octagon



radius = 0.168652864098 density = 0.758234537567
ratio = 5.929338972962 contacts = 45