Using Jones's logic, we can find what possible combinations of regular polygons will fill all the space around a point. Here's where our chart of angle sizes (figure 3-17) is very helpful. Kepler first addressed the problem of finding tessellating angle combinations nearly 400 years ago; mathematicians have now determined that 21 arrangements of regular polygons will fill the space around a point, as shown in figure 3-18. (Although the language of Jones's fifth limitation seems technically inconsistent with combinations 3.3.3.4.4 and 3.3.3.3.6, he apparently did not mean to exclude them.) Note that there are only 17 different angle combinations; the additional four arrangements are made by placing some of the same combinations of polygons in a different order.

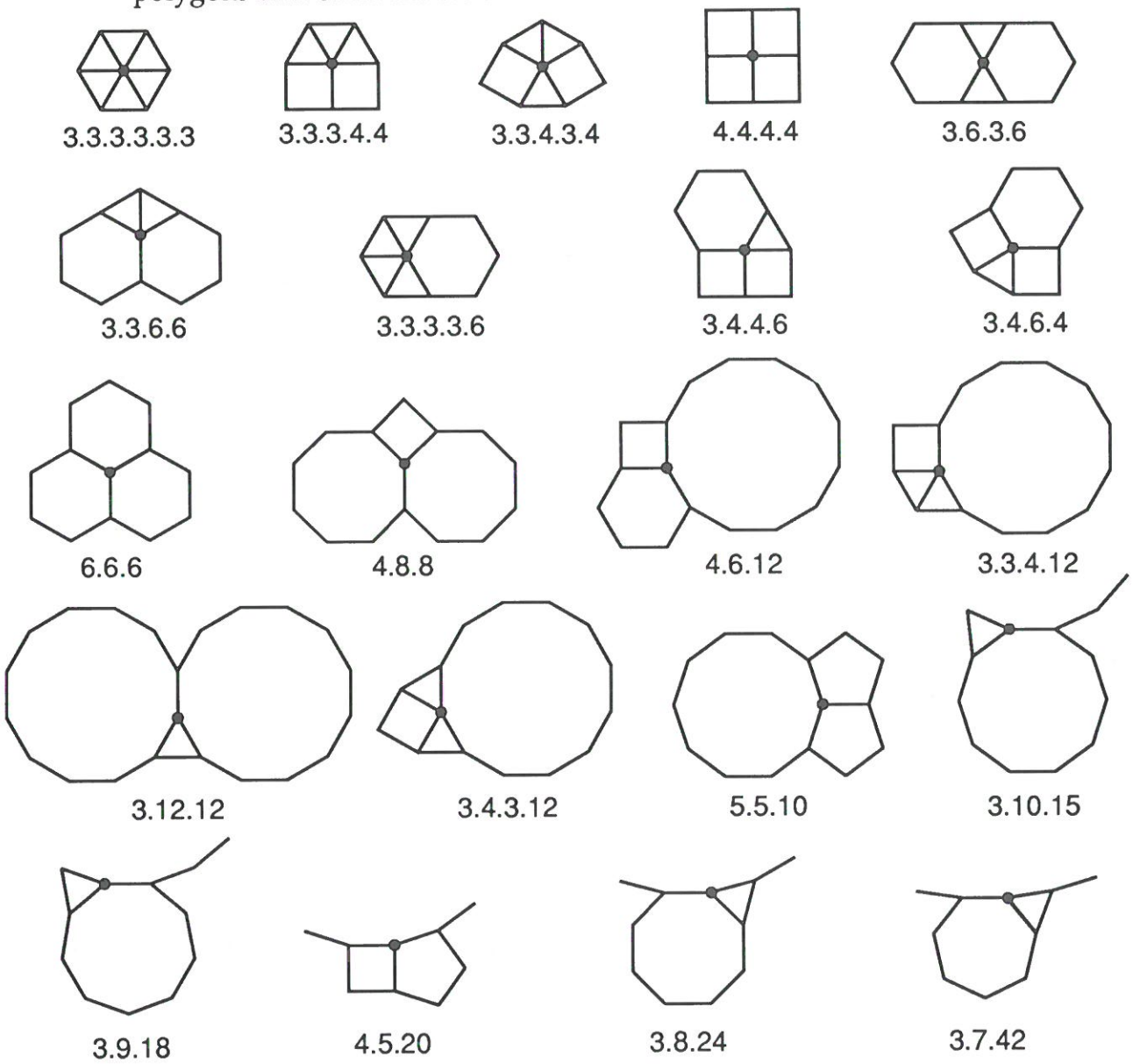

Fig. 3-18. The 21 arrangements of regular polygon combinations that fill the space around a point