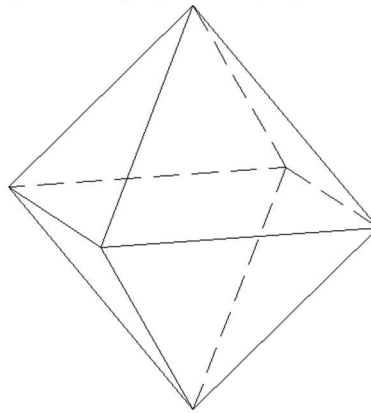


Computer Graphics

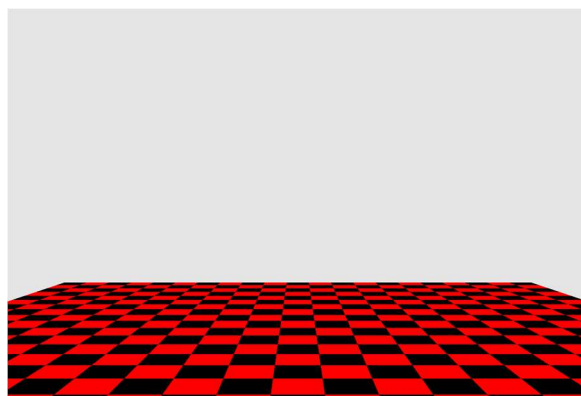
Exercises for Chapter 6

- 6.1** Write a class to implement an octahedron. Use an array of indices. An octahedron has 8 faces and 6 vertices:

$(0, 0, 1), (-1, 0, 0), (0, -1, 0), (1, 0, 0), (0, 1, 0), (0, 0, -1)$



- Add 2 buttons to the application to change between the polygon modes Line and Polygon.
 - Add 2 more buttons to the application to change between color modes Gouraud (must add color to the vertices) and Lighting (must generate normal, add light to the scene and set default material).
- 6.2** Develop a class to create a mosaic floor, in the form of a Shape3D, similar to the one shown in the following figure.



Use the class to add a floor to the scene of exercise 6.1. Parameterize the constructor of the class to be possible choose the color and the number of tiles. Base your code on the demonstration of the book that draws the 3D surface. The code will be very similar, you only need to consider Y always equal to zero, and add the parameters.