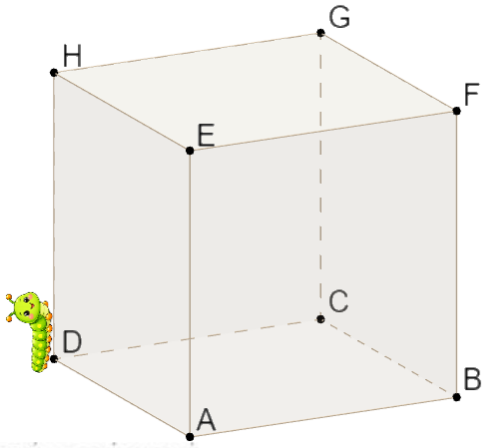
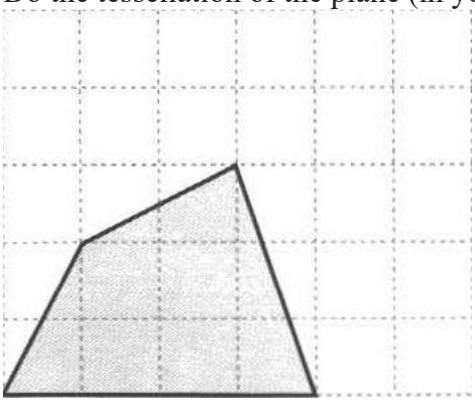
Math 5b, homework 22.

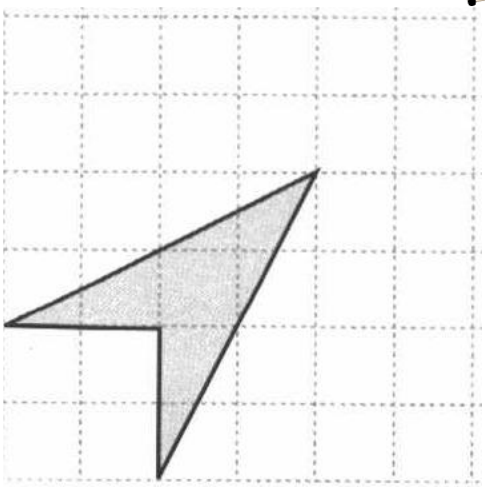
1. The problem we discussed in class is a little too difficult, we will do it in class this Sunday, so let's do another one:

   What would be the shortest way to caterpillar to go from point D to point F?



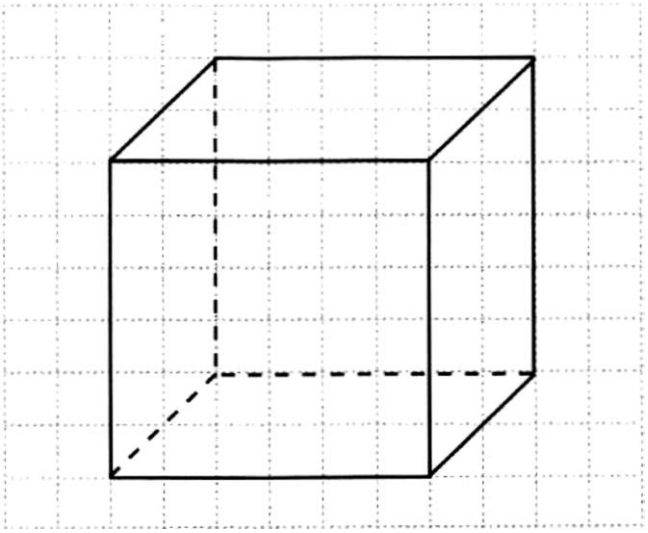
2. Do the tessellation of the plane (in your notebook):

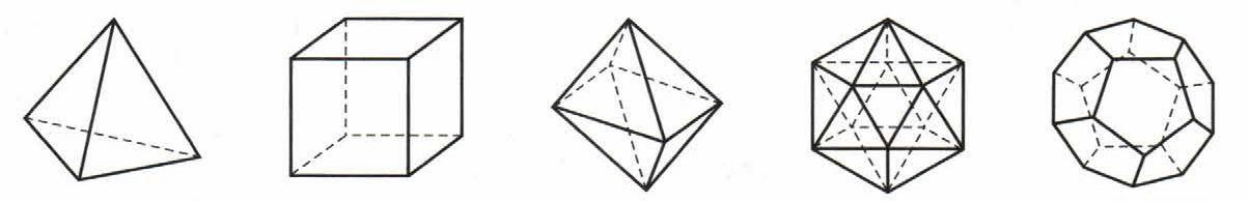




   Anwers are in the separate file on the homework page; you can take a look at them.

3. Mark the centers of the cube's faces on the drawing. Which polyhedron do these centers form the vertices of?





Tetrahedron Cube (hexahedron) Octahedron Dodecahedron Icosahedron

4. Open parenthesis first, then evaluate:

   Example:

   $$-9.7 + (-3.8 + 5.2) - (2.9 - 5.2 - 9.7) + 3.8 = -9.7 - 3.8 + 5.2 - 2.9 + 5.2 + 9.7 + 3.8$$
   $$= 10.4 - 2.9 = 7.5$$

   $(5.6 - 7.2) - (-7.2 + 3.4);$ $(1.8 - 6.03) - (-4.14 + 2.25 - 6.03) - 4.8$

   $\left(2.4 - \frac{2}{3}\right) + 2.4 - \left(1.8 + 1\frac{5}{6}\right);$ $-\left(5\frac{1}{3} - 4\frac{5}{16}\right) + 2\frac{1}{16} - \left(1\frac{2}{3} - 1\frac{5}{16} + 3\frac{11}{16}\right);$

5. An ancient Egyptian papyrus (1700 BC) contains a solution to an equation that, in the language of modern mathematics, can be written as:

   $$\left(\left(x + \frac{2}{3}x\right) + \frac{1}{3}\left(x + \frac{2}{3}x\right)\right) \cdot \frac{1}{3} = 10$$

   Solve this equation.