

Meeting 6

Nets, continued

November 8th, 2015

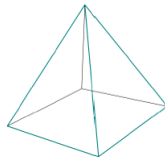
1. You will build a pyramid from a magnetic (or Play-Doh) set that has balls which you can use for vertices and sticks that you can use for edges.

How many balls do you need?

How many sticks do you need?

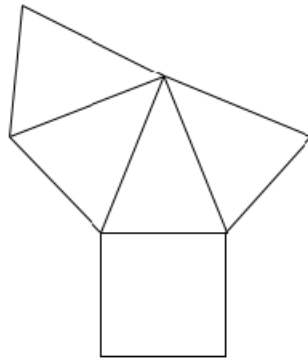
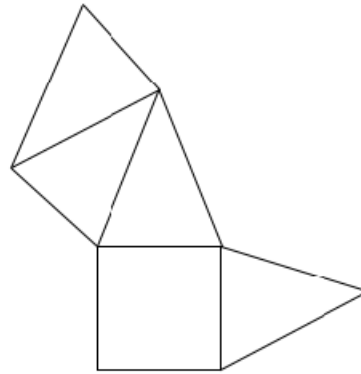
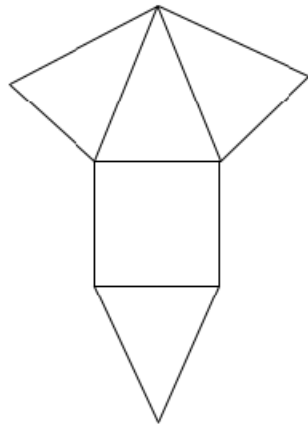
Use the necessary number of balls and sticks and build a pyramid.

2. Take a look at the pyramid. The base (bottom part) is a square. In addition, there is one more vertex above which is connected to each of the four vertices of the square.

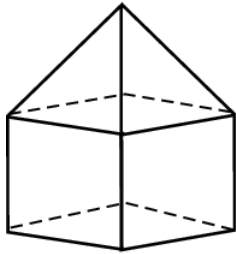


- (a) How many edges does the pyramid have?
- (b) How many vertices does the pyramid have?
- (c) How many faces does the pyramid have?
- (d) How many faces meet together at the top vertex?
- (e) How many face meet together at one of the bottom vertices?

3. Do the following nets make up a pyramid when put together? Mark the edges that should be glued to each other with the same color pencil.



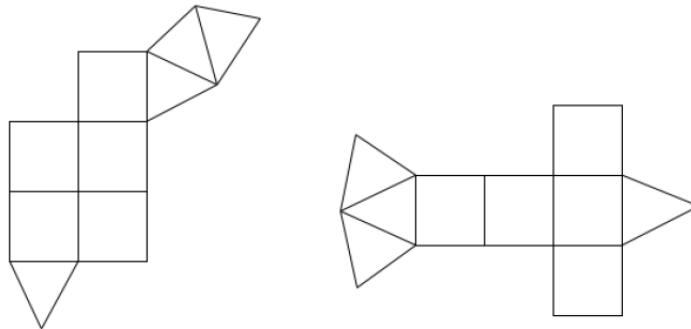
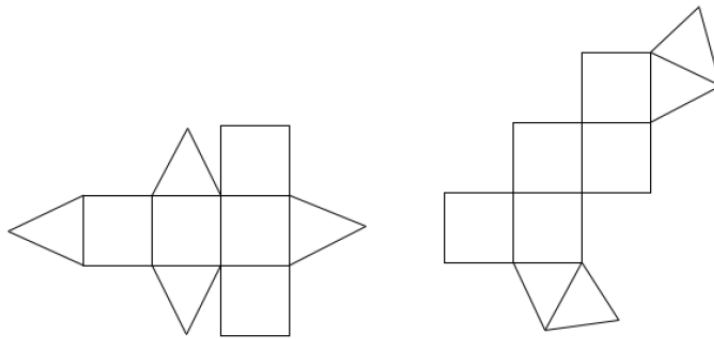
4. Take a cube and a pyramid such that the base of the pyramid is the square of the same size as the faces of the cube. Put the pyramid on top of the cube. Notice that the cube and the pyramid have a common face. It looks like a divider between the cube and the pyramid. We will call the resulting shape a house.



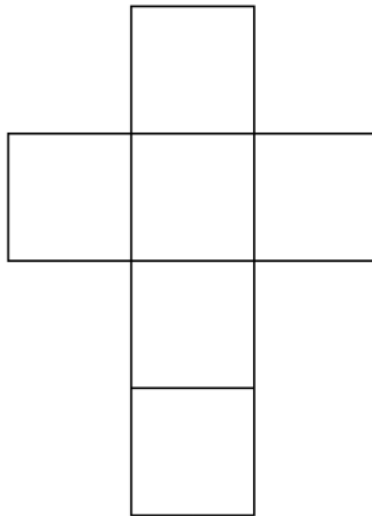
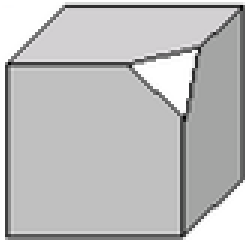
- (a) How many vertices does the house have?
- (b) How many faces does the house have?
- (c) How many faces meet together at one of the 4 bottom vertices at the base of the house?
- (d) How many faces meet together at one of the vertices at the bottom edge of the roof?

5. Which of the following nets can be used to make a house?

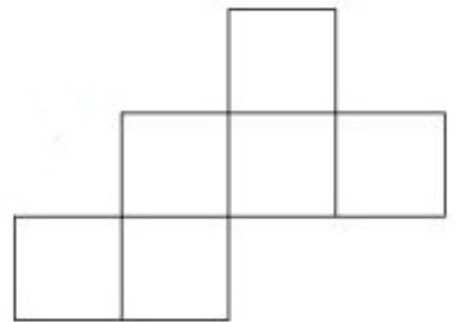
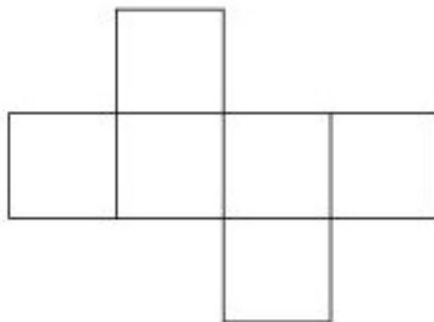
Color the edges that are glued to each other by the same color on the following nets of the house to help. First label the faces of the cube with U (for up), D (for down), L (for left), R (for right), F (for front), and B (for back).



6. We've had some practice with nets and with drawing paths on a cube net. Now we are going to take a look at cuts. In the following cube, a corner of the cube was cut out. Draw what this would look like on the cube net (color in the portion that is cut out).

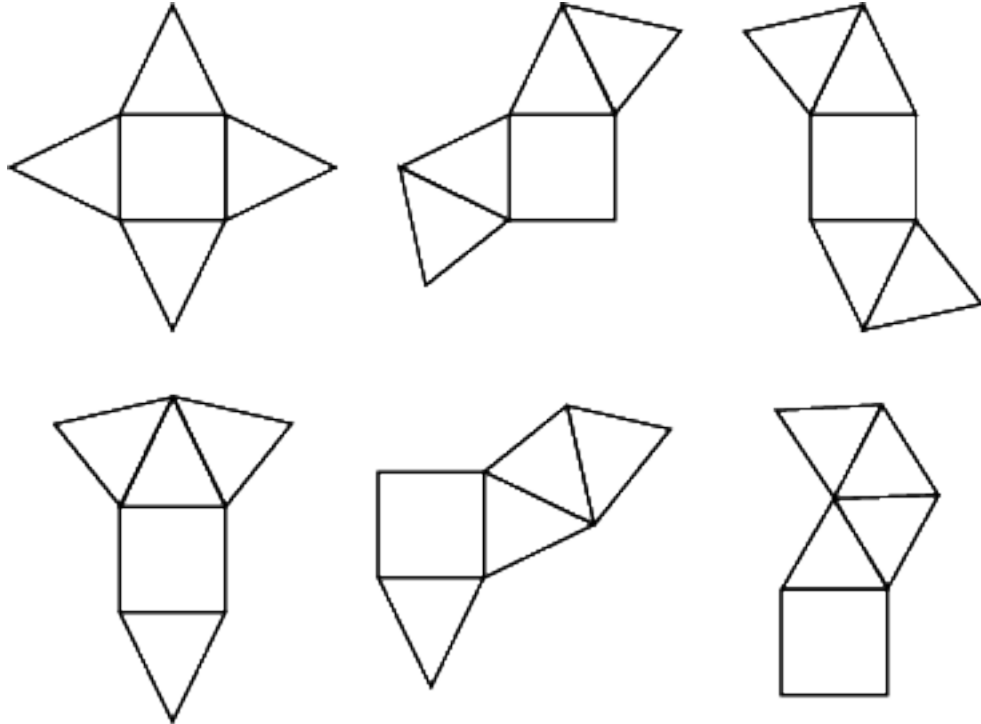


7. What would the same cube with a cut look like in the following nets?

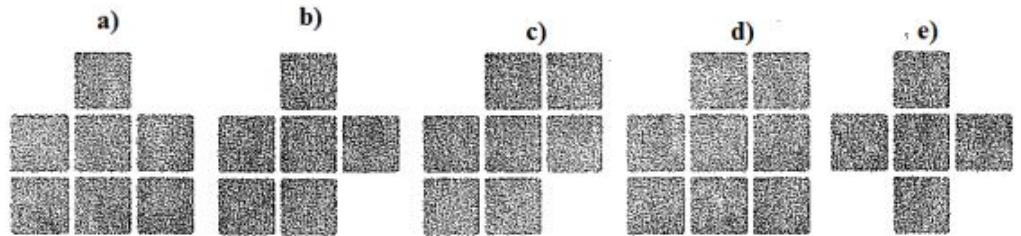
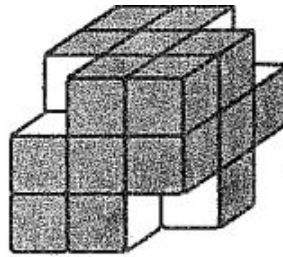


CHALLENGE PROBLEMS

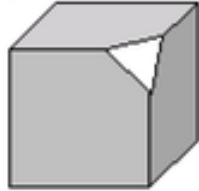
1. Do the following nets make a pyramid when put together? Mark the edges that should be glued together with a colored pencil.



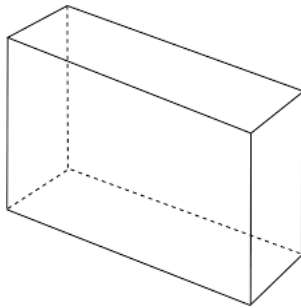
2. Katarina makes a large cube from 27 small white cubes. She paints all the faces of the large cube green. Then, Katarina removes a small cube from four corners, as shown below. While the paint is still wet, she stamps each of the new faces onto a piece of paper. Circle which of the following stamps Katarina can make. (Clue: she can make more than one!)



3. One corner of the cube was cut off. Which of the figures below represents the pattern of the cube after unfolding it?



4. What do you think a net for a rectangular prism looks like? A rectangular prism is pictured below.



5. What do you think a net for a cylinder looks like? A cylinder is pictured below.



HOMEWORK

1. Finish #1-7 on the handout from class.
2. Terry has a net of a die. Which of the following dice can Terry make using the net?

