

Platonic Solid Investigation

For each of the five Platonic solids count the number of faces, vertices and edges. After you have filled in the table look at the numbers carefully. Can you come up with an algebraic formula that relates the number of faces, vertices and edges? What is the relationship?

Object	Faces	Vertices	Edges
Tetrahedron			
Cube			
Octahedron			
Dodecahedron			
Icosahedron			

Formula: _____

Regular Polygon Investigation

One of the jobs of a mathematician is to take theories and formulas that are known and see if the same formulas hold for an unknown situation. If the formulas do not hold we sometimes try to come up with a formula that is similar. Take the formula you got for the Platonic solids above and see if it applies to polygons. Fill in the chart below and either verify that your formula works or if it doesn't work come up with a similar that does.

Object	Faces	Vertices	Edges
Triangle			
Square			
Pentagon			
Hexagon			
Heptagon			
Octagon			

Formula: _____