Vivian Chong
G40: 437:01
Homework 18

(1) Tetrahedron - 4 vertices, 6 edges, and 4 faces
Cube - 8 vertices, 12 edges, 6 faces
Octahedron - 6 vertices, 12 edges, 8 faces
dodecahedron - 20 vertices, 30 edges, 12 faces
Icosahedron - 12 vertices, 30 edges, 20 faces

(2) Remove one face of the polyhedral surface. By pulling the edges of the missing face away from each other, deform all the rest into a planar graph of points and curves. The regular faces are no longer regular. The number of faces was reduced by 1, but the number of edges and vertices remained the same. Thus, $V - E + F = 1$.

(4) $v = (\frac{1}{3})(5b + 6w)$

$b = 12$

$5b = 3w$

$5(12) = 3w$, $w = 20$

There are no adjacent pentagons