

Now we want to learn about two important types of polyhedra.

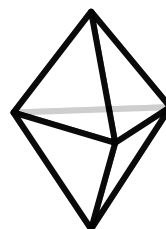
- A polyhedron is **SIMPLE** if exactly three edges meet at each vertex.
- A polyhedron is **SIMPLICIAL** if all its faces are triangles.

The tetrahedron shown on the left is the only polyhedron that is both simple and simplicial.



Exercises

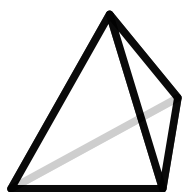
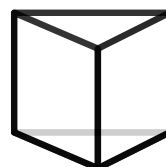
1. Which of the polyhedra on the right are simple? Which are simplicial? Which are neither simple nor simplicial?
2. Is your polyhedron simple? Is it simplicial? Write the answers on the profile of your polyhedron.



Additional exercises

Imagine we have a simple polyhedron with 6 vertices. Even without knowing anything else about the polyhedron, we can find out how many edges it has. Each vertex of the simple polyhedron has exactly 3 edges coming out of it. Each edge in a polyhedron connects exactly two vertices. So the simple polyhedron has $(3 \cdot V) \div 2 = (3 \cdot 6) \div 2 = 9$ edges.

Question: *Can there be a simple polyhedron with 5 vertices?*



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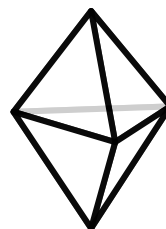
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