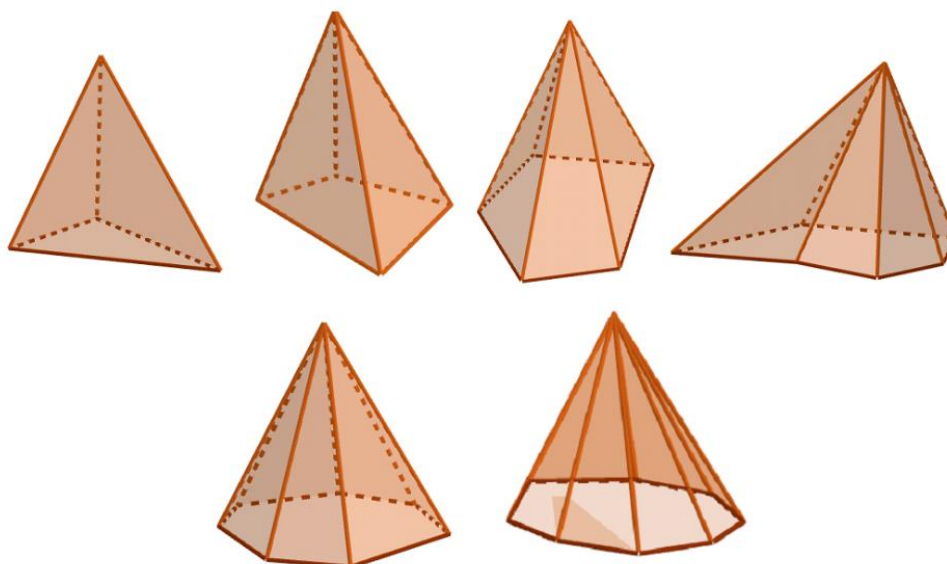## *Pyramids, Prisms and polygon of the bases – What relation?*

➢ **In the pyramids, what relationship exists between the number of sides of the polygon of the base and the number of faces, vertices, and edges?**

Count the number of faces, vertices, and edges of each of these pyramids. What do you observe?
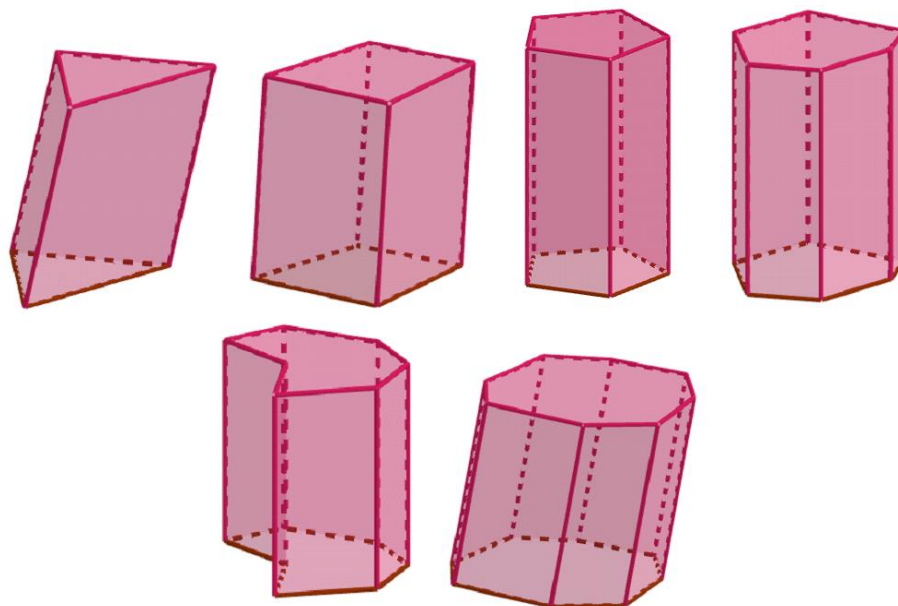
Confirm that your results match those in the table. What happens for a pyramid with a base polygon with n-sides?

Pyramid	N.º of sides of the base polygon (n)	N.º of faces (F)	N.º of vertices (V)	N.º of edges (E)
Triangular	3	4	4	6
Rectangular	4	5	5	8
Pentagonal	5	6	6	10
Hexagonal	6	7	7	12
Heptagonal	7	8	8	14
Octagonal	8	9	9	16
…	…	…	…	…
…	n	$n+1$	$n+1$	$2n$

Therefore, we have:

$$V = F = n + 1 \qquad E = 2n$$

➢ **And what about prisms? What relationship exists between the number of sides of the polygon of the base and the number of faces, vertices, and edges?**

Count the number of faces, vertices, and edges of each of these prisms. What do you observe?

Confirm that your results match those in the table. What happens for a prism with a base polygon with n-sides?

Prism	**N.º of sides of the base polygon (n)**	**N.º of faces (F)**	**N.º of vertices (V)**	**N.º of edges (E)**
Triangular	3	5	6	9
Rectangular	4	6	8	12
Pentagonal	5	7	10	15
Hexagonal	6	8	12	18
Heptagonal	7	9	14	21
Octagonal	8	10	16	24
…	…	…	…	…
…	n	$n + 2$	$2n$	$3n$

Therefore, we have:

$$F = n + 2 \qquad V = 2n \qquad E = 3n$$