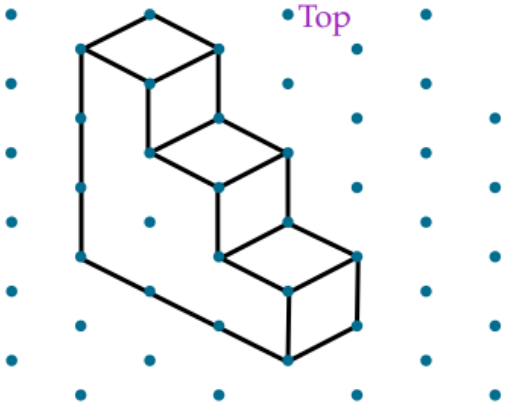
UNIT 13 FACTS

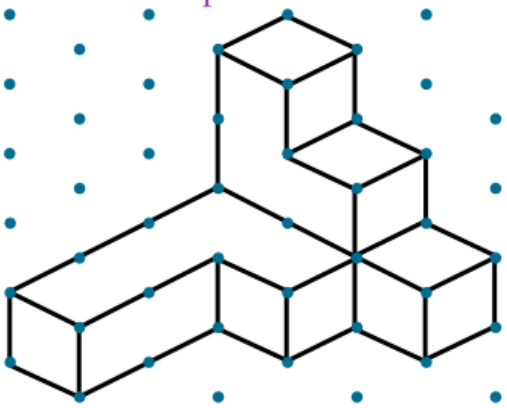
Convert the isometric drawing into a foundation drawing



Top

Convert the isometric drawing into a foundation drawing

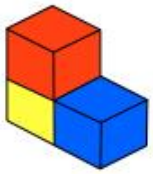
Top

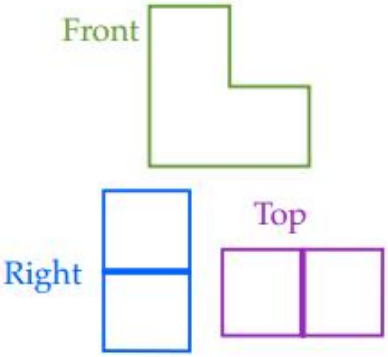


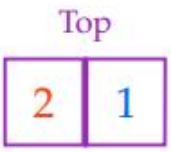
Top

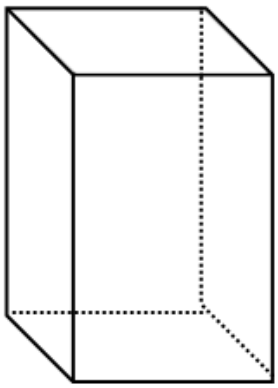
Representations of Three Dimensional Figures

3-D Figure	Isometric Drawing	Orthographic Drawing	Foundation Drawing

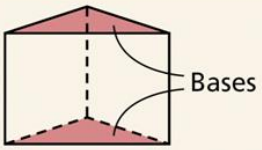
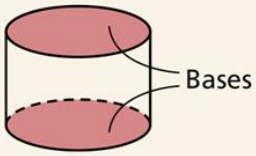
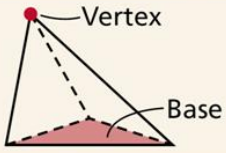
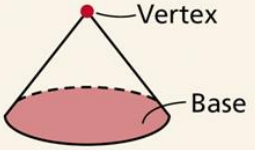






TERM:	DEFINITION	Sketch
Net	A two dimensional drawing of a three dimensional object	
Face	The polygons that form a three dimensional object.	
Base	Two congruent, parallel faces	
Base edges	The segments that form the bases.	
Lateral edges	The segments that connect the bases. They are part of the lateral faces.	
Vertex	The corners of the three dimensional object.	

Three-Dimensional Figures

TERM	EXAMPLE
A **prism** is formed by two parallel congruent polygonal faces called *bases* connected by faces that are parallelograms.	
A **cylinder** is formed by two parallel congruent circular bases and a curved surface that connects the bases.	
A **pyramid** is formed by a polygonal base and triangular faces that meet at a common vertex.	
A **cone** is formed by a circular base and a curved surface that connects the base to a vertex.	

Formulas

Diagonal of a Rectangular Prism: $d = \sqrt{l^2 + w^2 + h^2}$

Distance Formula: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$

Midpoint Formula: $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}, \frac{z_1 + z_2}{2} \right)$

Euler's Polyhedron Formula: **V – E + F = 2**

Prisms:

- **Lateral Area:** *LA = Ph or add areas of all lateral faces*
- **Total Area:** *TA = Ph + 2B or add areas of all faces*
- **Volume:** *V = Bh*

Cylinders:

- **Lateral Area:** *LA = 2πrh*
- **Total Area:** *TA = 2πrh + 2πr²*
- **Volume:** *V = Bh or V = πr²h*