## Area and Volume of Solids: Notes

# Important Vocabulary:

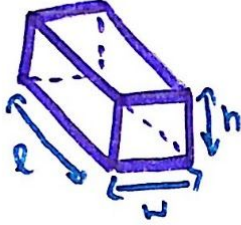**Lateral Faces:** 4 sided figures formed by the verticles of the bases

**Lateral Edges:** the segments connecting those vertices

**Bases:** top + bottom congruent faces

**Lateral Area:** the sum of lateral faces

**Surface Area:** sum of the lateral area and bases

# Prisms and Cylinders:

$$V = \ell w h$$
$$S.A. = 2\ell w + 2\ell h + 2wh$$

$$V = Bh$$
$$L.A. = hp$$
$$S.A. = hp + 2B$$

$$V = \pi r^2 h$$
$$L.A. = 2\pi r h$$
$$S.A. = 2\pi r^2 + 2\pi r h$$

# Sphere:

$$V = \frac{4}{3}\pi r^3$$
$$S.A. = 4\pi r^2$$

# Cone and Pyramid:

$$V = \frac{1}{3}\pi r^2 h$$
$$L.A. = \pi r \ell$$
$$S.A. = \pi r^2 + \pi r \ell$$

$$V = \frac{1}{3}Bh$$
$$L.A. = \frac{1}{2}\ell p$$
$$S.A. = \frac{1}{2}\ell p + B$$

→ slant height: height of a lateral face of a regular pyramid or cone