4.3 Classwork: Volume of a prism (box)

1. Find the volume of a rectangular prism with length 5 cm, width 4 cm, and height 3 cm.

2. Find the volume of a pyramid ($V = \frac{1}{3}Bh$) having a height of 11.3 inches and with a square base having side lengths of 7 inches. Express your result to the *nearest cubic inch*.

3. Find the volume of a sphere with a radius of 30 inches, to the *nearest whole cubic inch*. (The formula for the volume of a *sphere* is $V = \frac{4}{3}\pi r^3$)

4. A waffle cone has a radius of 2 inches and height of 4 inches.
   (a) Write down the general formula for the volume of a cone.

   (b) Find the volume of the waffle cone.

5. A given sphere has a radius of 6 inches.
   (a) Write down the general formula for the volume of a sphere, using r to represent the radius.

   (b) Find the volume of the sphere, to the *nearest whole cubic inch*.

6. A pyramid with a square base has a volume of 576 cubic inches. Its height is the same as the lengths of the sides of the base. Find the area of its base.

7. Spicy Do Now: The volume of a sphere is $(121\frac{1}{2})\pi$. Find its radius.

8. A pyramid with a square base has a volume of 576 cubic inches. Its height is the same as the lengths of the sides of the base. Find the area of its base.

   Given the volume formula $V = \frac{1}{3}(s^2)h$ for a pyramid with a square base ($B = s^2$).

   (a) Write down the variable representing the height

   (b) Write down the variable representing the length of the base's side

   (c) Write an equation relating the two variables in (a) and (b)

   (d) Substitute and solve

$$V = \frac{1}{3}(s^2)h$$