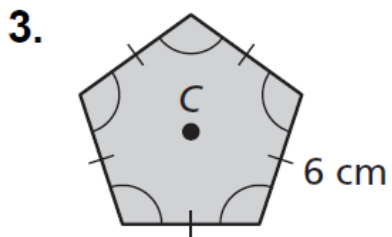
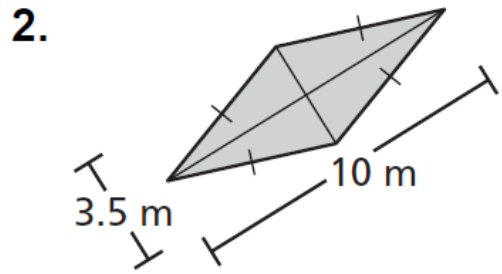
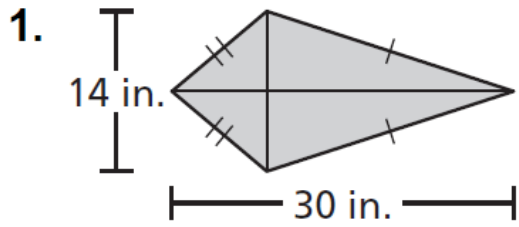


Find the area of the figure.



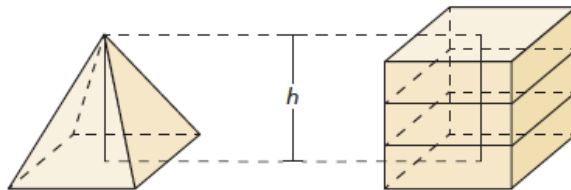
Use the given information to write the standard equation of the circle.

1. The center is $(2, 5)$, and the measure of the radius is 7 units.
2. The center is $(-3, 9)$, and the measure of the diameter is 6 units.
3. The center is $(8, -4)$, and a point on the circle is $(0, -4)$.
4. The center is $(-11, -3)$, and a point on the circle is $(1, 2)$.

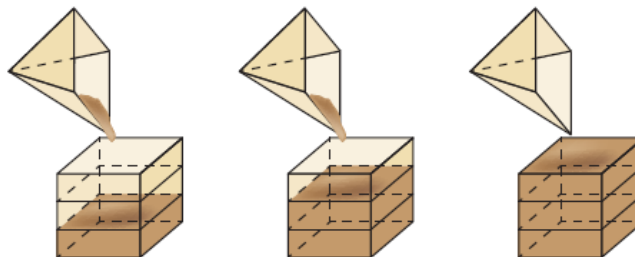
Essential Question

How can you find the volume of a pyramid?

Work with a partner. The pyramid and the prism have the same height and the same square base.

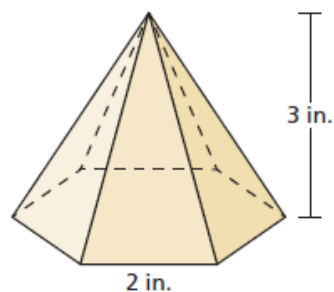


When the pyramid is filled with sand and poured into the prism, it takes three pyramids to fill the prism.



Use this information to write a formula for the volume V of a pyramid.

Work with a partner. Use the formula you wrote in Exploration 1 to find the volume of the hexagonal pyramid.



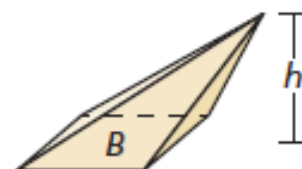
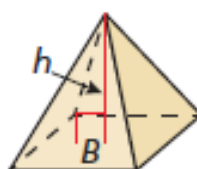
Core Concept

Volume of a Pyramid

The volume V of a pyramid is

$$V = \frac{1}{3}Bh$$

where B is the area of a base and h is the height.

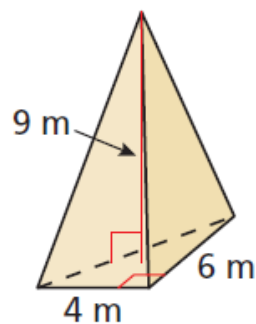


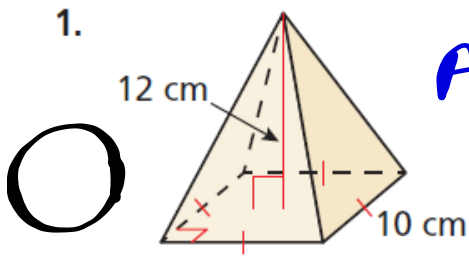
Find the volume of the pyramid.

$$V = \frac{1}{3} B h$$

$$V = \left(\frac{1}{3}\right) \left(\frac{1}{2} 4 \cdot 6\right) (9)$$

$$V = 36 \text{ m}^3$$





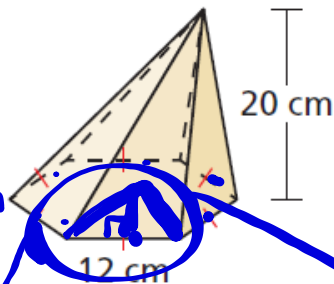
2.

$$A = \frac{1}{2}ans$$

$$n = 6$$

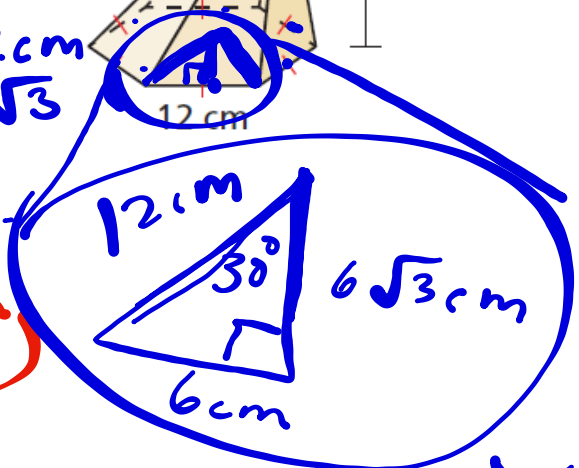
$$s = 12\text{ cm}$$

$$a = 6\sqrt{3}$$



$$V = \frac{1}{3} (100\text{ cm}^2) (12\text{ cm})$$

$$V = 400\text{ cm}^3$$



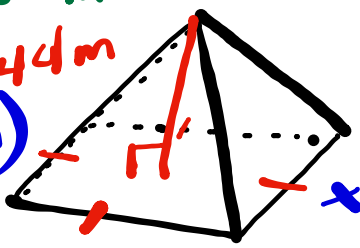
$$V = \frac{1}{3} \left(\frac{1}{2} 6 \cdot 12 \cdot 6\sqrt{3} \right) (20)$$

$$V = 2494.2\text{ cm}^3$$

Originally, Khafre's Pyramid had a height of about 144 meters and a volume of about 2,218,800 cubic meters. Find the side length of the square base.

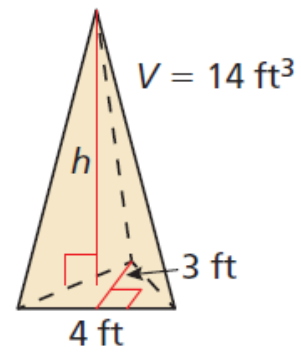
$$\sqrt[3]{\frac{2,218,800 \text{ m}^3}{144}} = \sqrt[3]{\frac{1}{3}(x^2)(144 \text{ m})}$$

144m

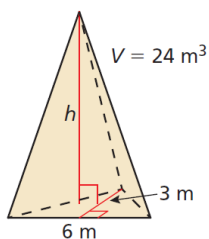


$$x = \sqrt{\frac{3 \cdot 2,218,800}{144}} = 215 \text{ m}$$

Find the height of the triangular pyramid.



3. The volume of a square pyramid is 75 cubic meters and the height is 9 meters. Find the side length of the square base.



4. Find the height of the triangular pyramid at the left.

Pyramid A and pyramid B are similar.

Find the volume of pyramid B.

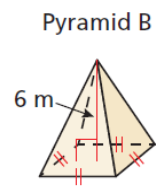
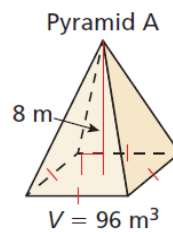
height : P_A P_B
 $8m$ $6m$

Area : $64m^2$ $36m^2$

Volume : $512m^3$: $216m^3$

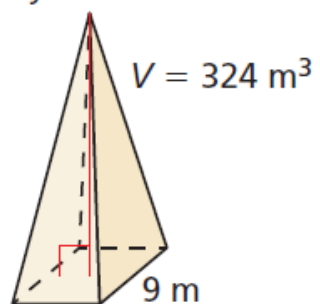
$$\frac{V_B}{96} = \frac{216}{512} \cdot 96m^3 \quad V_B$$

$$V_B = 40.5m^3$$

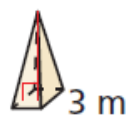


5. Pyramid C and pyramid D are similar. Find the volume of pyramid D.

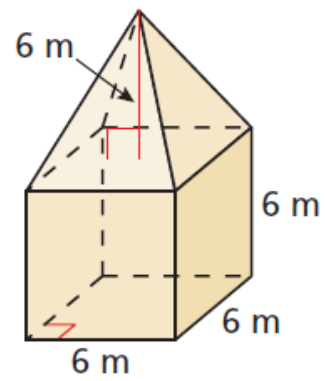
Pyramid C



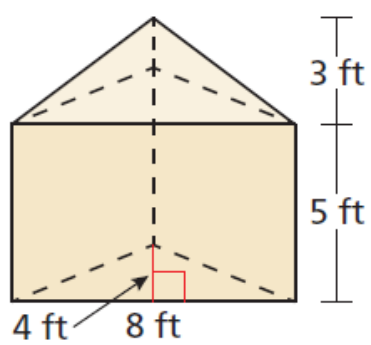
Pyramid D



Find the volume of the composite solid.



6. Find the volume of the composite solid.



- Exit Ticket: Find the volume of the Louvre Pyramid. It reaches a height of about 72 feet, and the square base has side length of about 116 feet.