

Assignment

Write

Describe the differences between pyramids and prisms. Use examples to help illustrate your description.

Remember

The volume of a pyramid is one third the volume of a prism with the same base and height.

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

Practice

Pyramid tents were popular for a time during the 19th century. Although their popularity declined during the 20th century, they have recently begun to regain popularity. The design is ideal for shaping canvas, and it only requires one pole and some stakes to secure it. Joe wants to make a right square pyramid tent and is considering two different sizes. He will either make one with a base that is 10 feet by 10 feet and has a height of 12 feet, or he will make one with a base that is 12 feet by 12 feet and has a height of 8 feet.

1. Sketch the two pyramid designs Joe is considering and label them with the given measurements.
2. How can you determine which pyramid tent will have the most interior space?
3. Calculate the volume of each proposed pyramid tent. Show your work.
4. Which tent would you recommend Joe make? Explain your reasoning.

Stretch

A rectangular pyramid has one half the volume of a rectangular prism with the same base area. What do you know about the height of the pyramid compared with the height of the prism?

Review

Describe the cross section that you would obtain if you sliced through a cube in the way described.

1. The cube is sliced in a way such that the plane passes through five of the six faces of the cube.
2. The cube is sliced in a way such that the plane passes through three intersecting edges, cutting off a corner of the cube.

Tell whether a triangle could be formed from the three side lengths. Explain your answer.

3. 4 cm, 5 cm, 6 cm

4. 12 ft, 8 ft, 2 ft

Solve each inequality.

5. $7 > -0.8y + 27$

6. $-2\frac{1}{2} \leq -\frac{1}{4}g + 3$