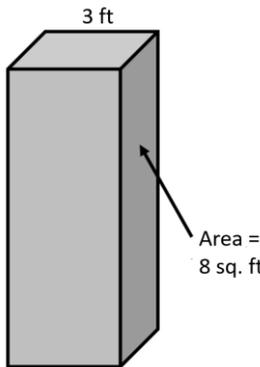
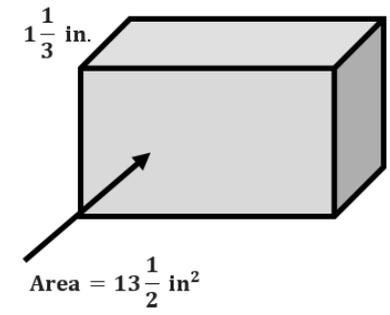


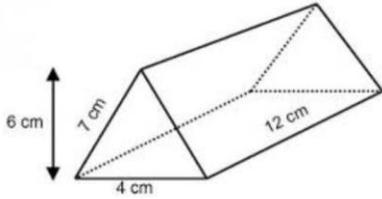
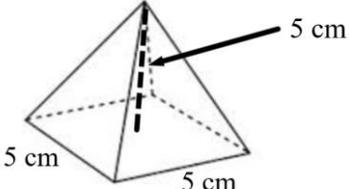
PROBLEM SET – Volume Part 2, Mr. Peralta, Class 622 and 623

Important Problems

TASK 1:

<p>Find the volume of the rectangular prism</p> 	<p>Extension: Find the remaining dimensions of the rectangular prism that would give it the <i>largest</i> surface area possible</p>
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<p>Find the volume of the rectangular prism</p> 	<p>Extension: Determine the volume of a rectangular prism whose length and width are in a ratio of 3: 1. The width and height are in a ratio of 2: 3. The length of the rectangular prism is 5 ft.</p>
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<p>Find the volume of the triangular prism</p> 	<p>Extension: Max claims that the figure below has a larger volume than the triangular prism on the left. Do you agree or disagree? Explain.</p> 
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TASK 2:

- A) The volume of a triangular prism is 16 cubic feet. Its base is 9 square feet. Find the height of the triangular prism.

- B) A company is creating a rectangular prism that must have a volume of 6 ft³. The company also knows that the area of the base must be 2 $\frac{1}{2}$ ft². Find the height of the rectangular prism.

- C) A company creates square prism boxes, each with a volume of 504 cm³. When laid on one of its square sides, the box is 3.5 cm tall. Find the remaining dimensions of the box.

Challenge Problems

1. Crystal has a running course marked out for her daily run. She starts this run by heading due north for one mile. She then runs northeast for one mile, then southeast for one mile. The last portion of her run takes her on a straight line back to where she started. How far, in miles, is this last portion of her run?
2. A *palindrome*, such as 83438, is a number that remains the same when its digits are reversed. The numbers x and $x + 32$ are three-digit and four-digit palindromes, respectively. What is the sum of the digits of x ?
3. A solid cube has side length 3 inches. A 2-inch by 2-inch square hole is cut into the center of each face. The edges of each cut are parallel to the edges of the cube, and each hole goes all the way through the cube. What is the volume, in cubic inches, of the remaining solid?

Challenge Problems

- Crystal has a running course marked out for her daily run. She starts this run by heading due north for one mile. She then runs northeast for one mile, then southeast for one mile. The last portion of her run takes her on a straight line back to where she started. How far, in miles, is this last portion of her run? $\sqrt{3}$
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