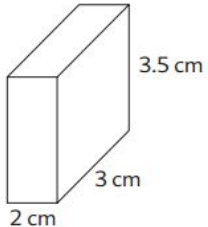
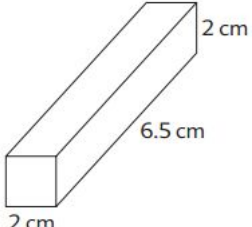
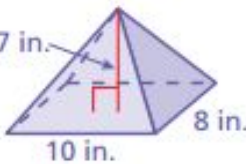
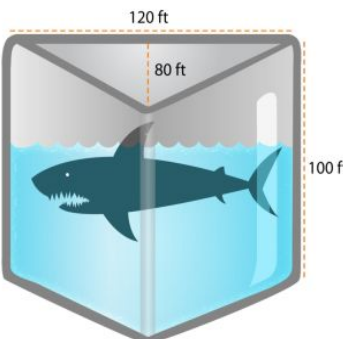
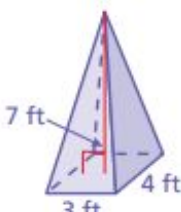
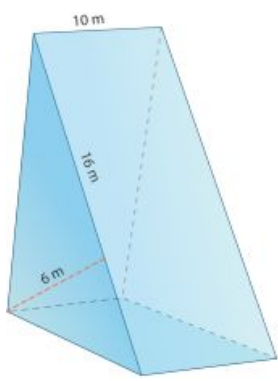



Unit 4 Volume and Surface Area STUDY GUIDE

Find the Volume.

<p>Formulas:</p> <p>Prisms: $V = Bh$ Pyramid: $V = \frac{Bh}{3}$</p> <p>Steps:</p> <ol style="list-style-type: none"> 1. Highlight/ Redraw the Base 2. Find the area of the base (B) 3. Find the height (h) 4. Substitute into formula. 5. Solve. 	<p>1.</p> 	<p>2.</p> 	<p>3.</p> 
	<p>4.</p> 	<p>5.</p> 	<p>6.</p> 

<p>7.</p> <p>PLUMBING Alexia's bathroom has a tub in the shape of a rectangular prism with a length of 1.5 meters, a width of 0.5 meter, and a height of 0.4 meter. How many cubic feet of water can it hold?</p>	<p>8.</p> <p>PACKAGING A cereal box has a length of 8 inches, a width of $1\frac{3}{4}$ inches, and a height of $12\frac{1}{8}$ inches. What is the volume of the cereal box?</p>
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<p>9.</p> <p>A rectangular tank is 25 cm long, 16 cm wide, and 30 cm high. It contains 8 L of water. How many more liters of water can it contain? (1 L = 1,000 cm³)</p>	<p>10. Jake found an old toy pyramid while he was cleaning out his closet. To help him finish cleaning out his closet, he placed all his old toys in the pyramid. If the pyramid had a height of 12 inches, a slant length of 15 inches, and a side base of 10 inches, how much could the pyramid hold?</p>
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<p>11.</p> <p>PARACHUTE In 1483, Leonardo da Vinci designed a parachute. It is believed that this was the first parachute ever designed. In a notebook, he wrote "If a man is provided with a length of gummed linen cloth with a length of 12 yards on each side and 12 yards high, he can jump from any great height whatsoever without injury." Find the volume of air inside Leonardo's parachute.</p>	<p>12.</p>  <p>(a) How many times more sunscreen is in Bottle B than in Bottle A? (b) Which is the better buy?</p>
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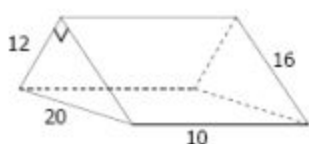
Surface Area

SA = 2B + PH

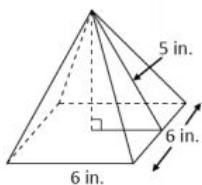
Steps:

1. **H**ighlight/ **R**edraw the base.
2. Find the area of the base (B).
3. Find the **P**erimeter of the base (P)
4. Find the height (h)
5. **S**ubstitute and **S**olve.

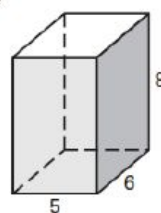
13.



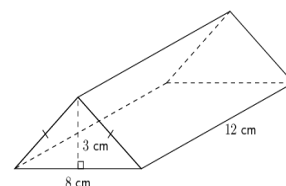
14.



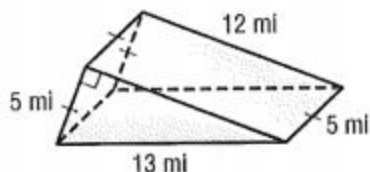
15.



16.



17. Donovan wanted to wrap the gift below. How much paper is he going to need?

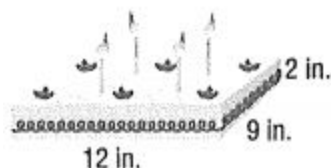


18. You have a square pyramid. The area of the square is 25 and the slant height of the pyramid is 10. Find the total surface area of the pyramid.

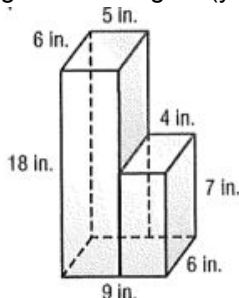
19. Suppose the length of each of a cube of ice is 4 centimeters. Find the surface area of the cube.

20. What is the surface area of a square-based pyramid with base side lengths of 16 meters, a slant height of 17 meters, and a height of 15 meters?

21. The top and sides of the cake shown below are to be covered in frosting. How much frosting are they going to need to cover the cake?

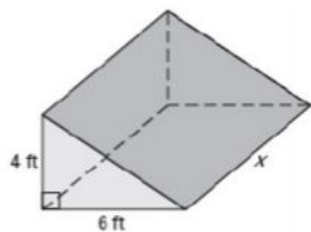


22. How much paint are you going to need to paint the entire figure to the right? (you do not paint the bottom of the rectangles)



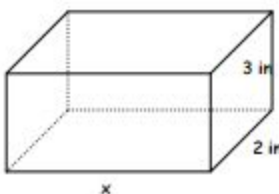
Working Backward

23. Find the value of x when SA = 200 ft²



7.2

24. If the Surface area of this shape is 54in², what is the value of x?



25. Find the width of a rectangular solid with length 15 cm, height 8 cm, and Volume of 480 cm³

26. The Volume of square pyramid is 784 . If the base edge is 14 centimeters, then how tall is the pyramid?

Name: _____ Date: _____ Block: _____ **DUE: MONDAY APRIL 3rd**

Answer Key:

1. 21
2. 26
3. 186.7
4. 480000
5. 480
6. 28
7. 4
8. 169.75
9. .3
10. 1200
11. 576
12. 3:2, B
13. 672
14. 96
15. 236
16. 312
17. 210
18. 125
19. 96
20. 800
21. 300
22. 578
23. 24.4
24. 4.2
25. 4
26. 12