

4/17/17 CCM6+

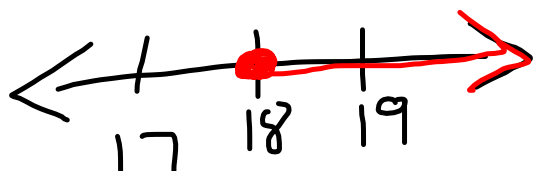
Solve real-world problems with Volume and Surface Area.

1. Agenda...HW is pages 32-35 (what we don't finish in class).
2. Get calculator. No HW to check.
3. Complete Monday warm-ups with calculator.

Warm-ups Monday

① $x \geq 18$

② $3.1 \times 3.1 \times 3.1$

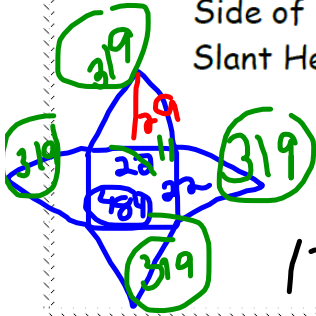


29.791

HW P 32 # 7-8 only

7. Find the surface area of the real-life pyramid:

Pyramid of Caius Cestius in Rome
 Side of base ≈ 22 m
 Slant Height ≈ 29 m



8. Find the surface area of the real-life pyramid:

Muttart Conservatory in Edmonton
 Side of base ≈ 26 m
 Slant Height ≈ 27 m



9. Find the surface area of the real-life pyramid:

Cheops Pyramid in Egypt
 Side of base ≈ 230 m
 Slant Height ≈ 186 m



10. Find the surface area of the real-life pyramid:

Luxor Hotel in Las Vegas
 Side of base ≈ 600 ft.
 Slant Height ≈ 461 ft.



11. Find the surface area of the real-life pyramid:

The Pyramid of the Sun in Mexico
 Side of base ≈ 223.5 m
 Slant Height ≈ 132.5 m



12. Find the surface area of the real-life pyramid:

Louvre Pyramid in Paris
 Side of base ≈ 35 m
 Slant Height ≈ 28 m



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PROBLEM SOLVING WITH VOLUME AND SURFACE AREA

Directions:

- (1) Choose & write whether the problem is asking you to find SURFACE AREA or VOLUME
- (2) Write the formula (if needed) which you would use to solve the problem.
- (3) Do *STEPS 1 & 2* for all problems before you start solving so we can make sure everyone has the correct formulas to start 😊
- (4) Solve
- (5) Label your answer with the correct units

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1. Elena wants to paint her jewelry box blue. The jewelry box is in the shape of a cube and has an edge length of 4 in. How much blue paint will Elena need?

~~2. Nicholas has a pepper shaker in the shape of a cylinder. It has a radius of 9 mm and a height of 32 mm. How much pepper will fit in the shaker?~~

3. Reynaldo builds a pool in his backyard. The pool measures 55 feet long, 28 feet wide, and 9 feet deep. How much water will fit in the pool?

4. How many square feet of cardboard does Jessica need to make a rectangular prism with length of 16 inches, width of 9 inches, and height of 4 inches?

5. How much gift wrap is needed to cover a box which measures 3 feet by 2 feet by 3 feet?

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6. A package shaped like a cube has an edge that is 28 cm long. How much space is available to pack inside the box?

$$V = 28^3 = 21,952 \text{ cm}^3$$

- ~~7. A cylindrical fish tank is 1 foot tall. The radius of the fish tank is 5 inches. How much water does it take to fill the tank? (Be careful – look at the units you are given)~~

8. Kissie needs to paint the top and sides of a rectangular prism. The prism has a length of 25 mm, a width of 15 mm, and a height of 9 mm. How much paint does she need to cover the top and sides?

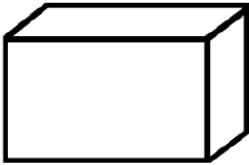
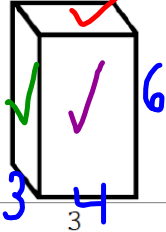
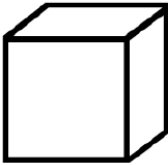
- ~~9. Brittany is going to cover the label on a Pringle's can and decorate it for Easter. The can has a diameter of 4.5 in. and a height of 14 in. She only needs to cover the label, not the top or bottom of the can, what is the minimum amount of paper needed?~~

- ~~10. A cereal company decided to make an odd-shaped box for a promotion they are doing. The new design is a rectangular prism with length of 10 in, width of 8 in., and height of 4 in. and attached to the rectangular prism is a cylinder with a radius of 2 in. and a height of 10 in. How much cereal will fit in the box?~~

HW p 35

Application of Surface Area and Volume Homework

Margo and her mom have developed the world's best chocolate chip cookie dough recipe. They are ready to start selling their yummy creation, but they are struggling to find the best way to package it for shipping. Their options for different sized cartons are below.

Option	Length	Width	Height	How much does it hold? ✓	How much label is needed? SA
<p>1</p> 	8 in	3 in	3 in		
<p>2</p> 	3 in	4 in	6 in	72 in ³	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-between; width: 100%;"> BT 12 12 </div> <div style="display: flex; justify-content: space-between; width: 100%;"> R 18 18 </div> <div style="display: flex; justify-content: space-between; width: 100%;"> F 24 24 </div> <hr style="width: 100%;"/> 108 in² </div>
	4 in	4 in	4 in		

1. Which option holds the most cookie dough inside? Is this surface area or volume?
2. Which option would use the least amount of label, assuming they covered the entire outside of the carton with a label? Is this surface area or volume?
3. Which carton would you use? Justify your answer.