CP Geometry
Final Exam Review Packet
2015-2016

This packet reviews the basic concepts that you learned in each of the units taught this semester that will be assessed on the final exam. You should complete this review packet carefully and thoroughly and review your chapter/unit tests in preparation for the exam. You will have 100 minutes for the exam.

On the day of your exam, don't forget a #2 pencil, eraser, and calculator!

Format of Final Exam:

1 PBA	6 pts. each
11 Open-Ended/Short Answer	2 pts. each
50 Multiple Choice	1 pt. each
Total	78 points total

Geometry Formula Sheet

Area Formulas

Lateral Area of cylinder $= C \cdot h = 2\pi rh$

Lateral Area of prism $= p \cdot h$

Lateral Area of cone $= \frac{1}{2} \cdot \ell \cdot p = \pi r \ell$

Lateral Area of pyramid $= \frac{1}{2} \cdot \ell \cdot p$

Surface Area of prisms and cylinders $= LA + 2B$

Surface Area of pyramids and cones $= LA + B$

Surface Area of sphere $= 4\pi r^2$

$A_{(\text{Circle})} = \pi r^2$ $A_{\Delta} = \frac{1}{2}bh$ $A_{(\text{Parallelogram})} = bh$ $A_{(\text{Regular Polygon})} = \frac{1}{2}ap$

$A_{(\text{Trapezoid})} = \frac{1}{2}(b_1 + b_2)h$ $A_{(\text{Kite \& Rhombus})} = \frac{1}{2} \cdot d_1 \cdot d_2$

Volume Formulas

Volume of prisms $= B \cdot h$ Volume pyramids $= \frac{1}{3}Bh$ Volume of cylinders $= \pi r^2 h$

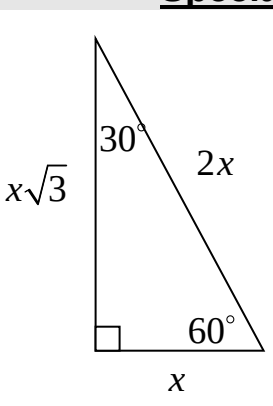
Volume of cones $= \frac{1}{3}\pi r^2 h$ Volume of sphere $= \frac{4}{3}\pi r^3$

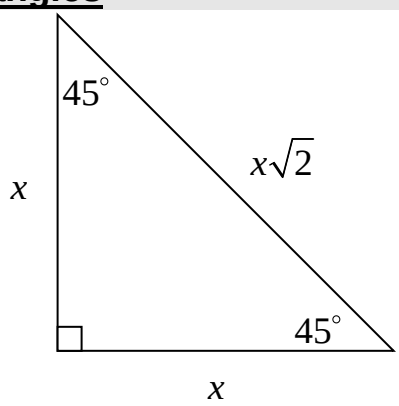
Other Formulas

$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$ $a^2 + b^2 = c^2$

$C = \pi d = 2\pi r$ $m = \frac{y_2 - y_1}{x_2 - x_1}$ $y = mx + b$ $y - y_1 = m(x - x_1)$

Special Right Triangles

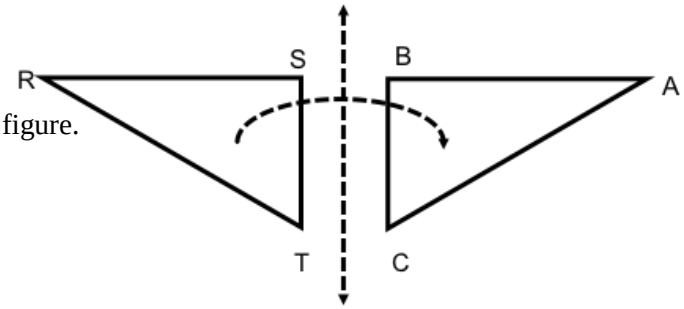




CP Geometry Name_____

Directions: Multiple Choice → Circle the letter of the correct answer for each problem.
****Show all work** for each problem to receive credit for the packet.****

For #1-3, refer to the figure at the right.



1. Identify the motion (transformation) illustrated in the figure.

   A. Translation B. Rotation
   C. Slide D. Reflection

2. Name the image of $\overline{ST}$.

   A. $\overline{AB}$ B. $\overline{AC}$ C. $\overline{BC}$ D. $\overline{RS}$

3. Name the angle that corresponds to $\angle A$.

   A. $\angle R$ B. $\angle S$ C. $\angle T$ D. $\angle B$

4. If 16:36 = 24:x, find the value of x.

   A. $\frac{32}{3}$ in. B. 54 in. C. 60 in. D. 64 in.

5. Solve: $\frac{x}{x+2}=\frac{6}{8}$

   A. 5 B. 6 C. 12 D. 14

6. Eight pounds of potatoes cost $3.75. How much will 20 pounds cost?

A. $8.78 B. $8.92 C. $9.24 D. $9.38

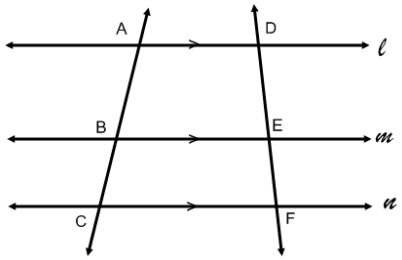
7. On the blueprint for a treehouse, 1 centimeter represents 0.35 meters. If the width of the treehouse is 9.4 centimeters on the blueprint, what is the actual width of the treehouse to the nearest tenth of a meter?

A. 2.6 m B. 2.9 m C. 3.3 m D. 3.9 m

8. If $\Delta ABC \sim \Delta XYZ$, AB = 25, AC = 30, YZ = 20, and XZ = 18, find XY. (hint – draw a picture!)

A. 15 B. 22.5 C. 30 D. 37.5

For #9-10, refer to the figure at the right. In the figure, *l* || *m* || *n*.



9. Complete the proportion → $\frac{EF}{DE} = \frac{BC}{?}$

A. AB B. AC C. DE D. EF

10. If AB = 8, BC = 14, and DF = 33, find EF.

A. 20 B. 21 C. 22 D. 25

11. $\Delta UVW \sim \Delta XYZ, UV = 15, UW = 25, \text{and } XZ = 60$. If the perimeter of ΔXYZ is 168, find the perimeter of ΔUVW.

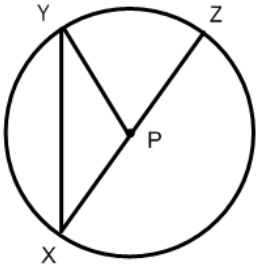
A. 42 B. 56 C. 64 D. 70

(hint-label and use triangles to help you!)

12. How many lines of symmetry does a square have?

A. 1 B. 2 C. 3 D. 4

For #13-14, refer to the figure at the right.

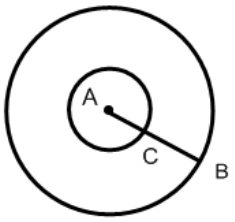


13. Which statement is false?

A. $\overline{XZ}$ is a diameter of circle P. B. $\overline{XY}$ is a chord of circle P.
C. $\overline{PZ}$ is a chord of circle P. D. $\overline{PX}$ is a radius of circle P.

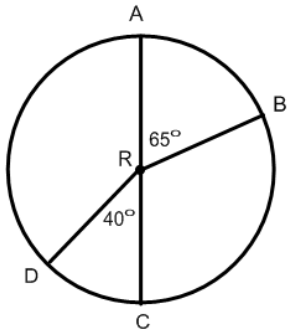
14. If PY = 22 centimeters, find the diameter of circle P.

A. 11 cm B. 22 cm C. 33 cm D. 44 cm



15. Point A is the center of both circles shown at the right.
If the diameters of the circles are 8 inches and 18 inches, find BC.

A. 5 in. B. 7 in. C. 10 in. D. 13 in.



For #16-17, refer to the figure at the right.
In the figure, $\overline{AC}$ is a diameter of Circle R.

16. ABC is a

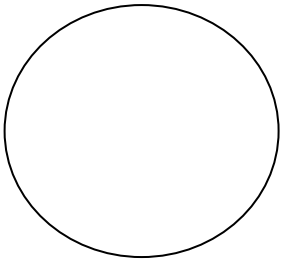
A. major arc B. semicircle C. minor arc D. central arc

17. Find m BD.

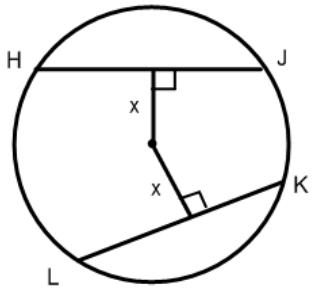
A. 105 B. 125 C. 140 D. 155

***For #18-60, show all work and circle your final answer. These are short answer questions!**

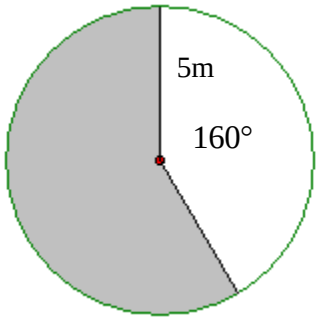
18. A chord of a circle is 9 inches long and its midpoint is 6 inches from the center of the circle. What is the length of the radius of the circle to the nearest tenth? (hint – use circle below to draw and label)

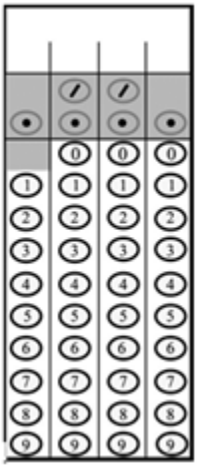


19. Refer to the figure at the right.
If HJ = 3x and KL = 5x – 6, find the value of x.



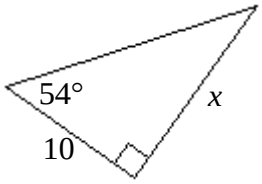
20. Find the area of the shaded sector of circle C to the nearest tenth.
Use 3.14 for pi.





Write an equation involving *sin*, *cos*, or *tan* that can be used to find *x*. Then, solve the equation. Round answers to TWO decimal places.

21.



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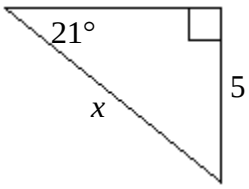

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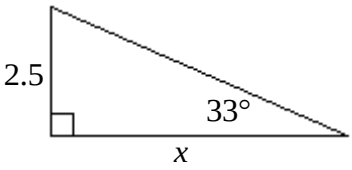

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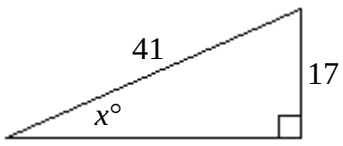

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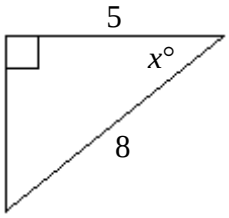

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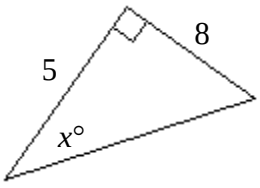
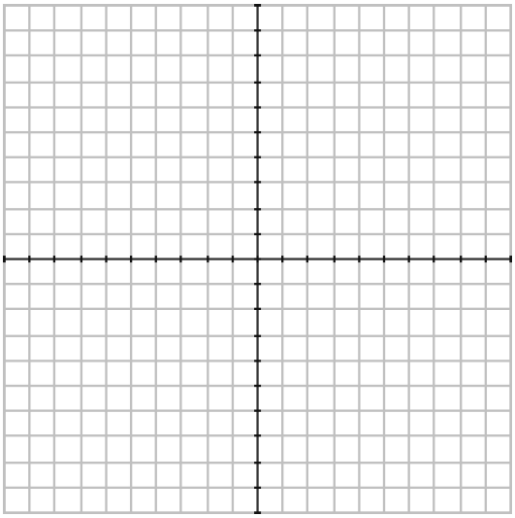


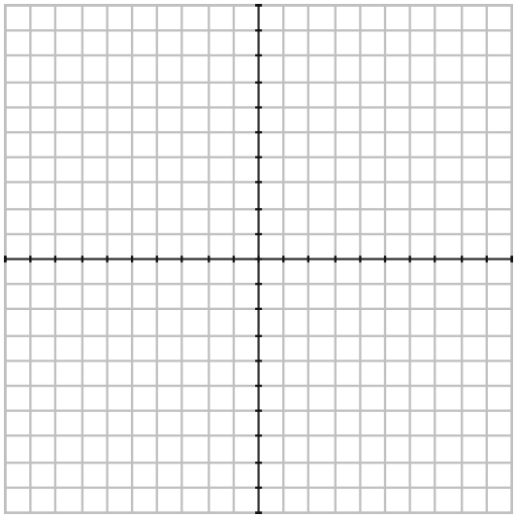
27. To approach a runway of the Ponca City Municipal Airport in Oklahoma, the pilot must begin a 3° descent starting from an altitude of 2714 ft. Draw and label a diagram. Then, write a trigonometric equation to find how many feet the airplane is from the runway (airport distance), to the nearest foot.

Coordinate Geometry **Given points $J(1, 4)$, $A(3, 5)$, and $R(2, 1)$, draw $\triangle JAR$ and its reflection image in each line.**

28. The *x*-axis



29. The *y*-axis



30. What is the reflection image of (5, −3) in the *y*-axis?

A. (5, 3) **B.** (−5, 3) **C.** (−5, −3) **D.** (−3, 5)

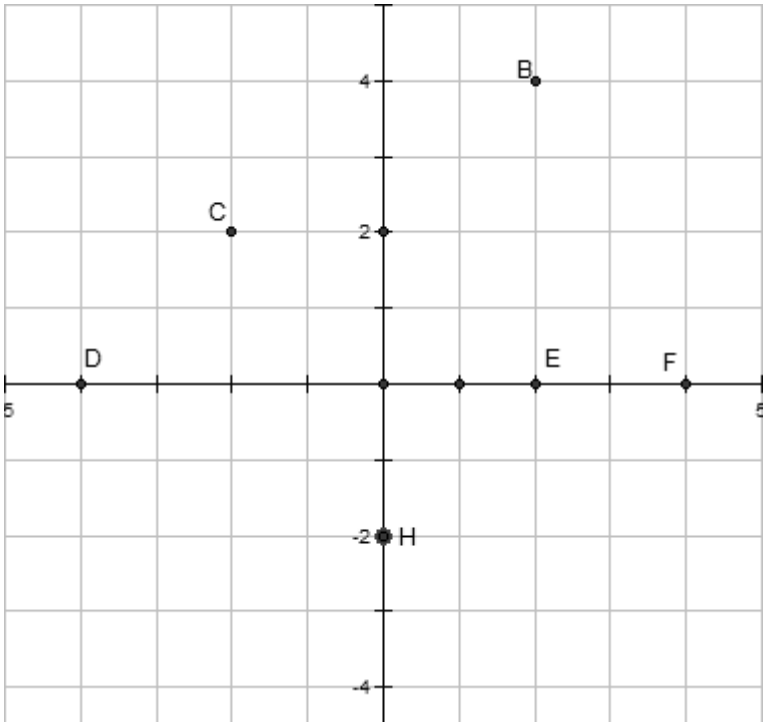
Use the diagram below to answer questions #31-34.

31. Identify the image of C under the translation $< 4, -2 >$ _____

32. Identify the vector that describes the translation $F \rightarrow B$ _____

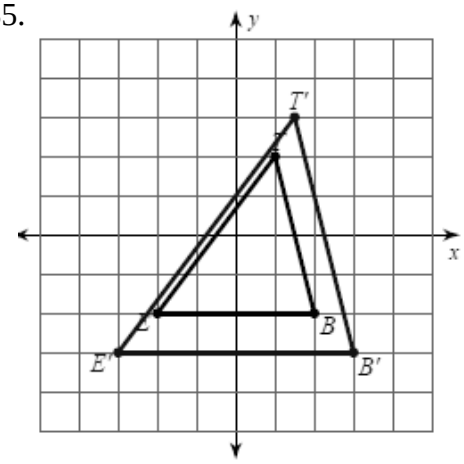
33. Identify the image of H under the translation $< -2, 4 >$ _____

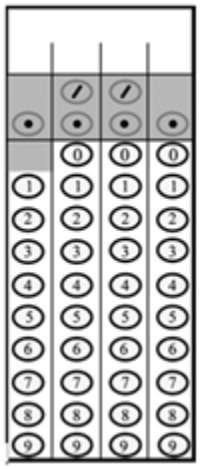
34. What vector describes the translation $D \rightarrow H$ _____



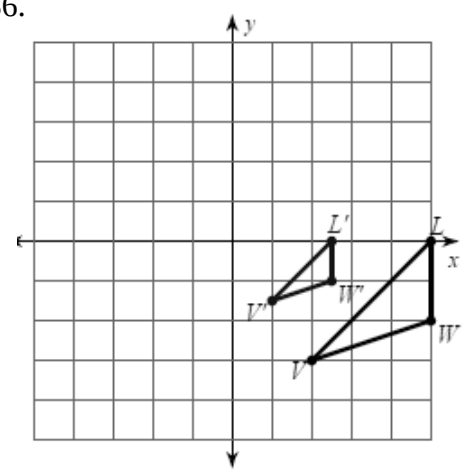
Identify the scale factor of each dilation. Assume the center is $(0,0)$.

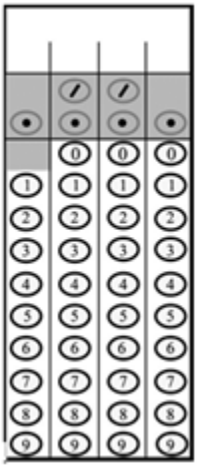
35.





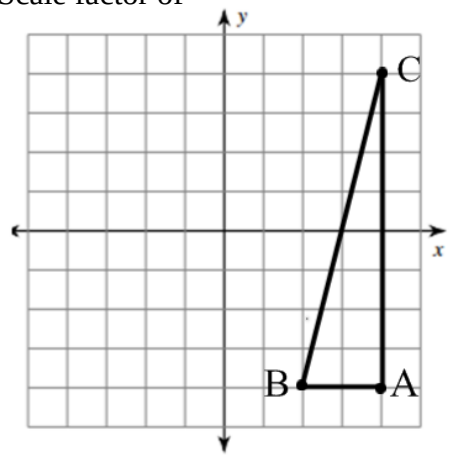
36.



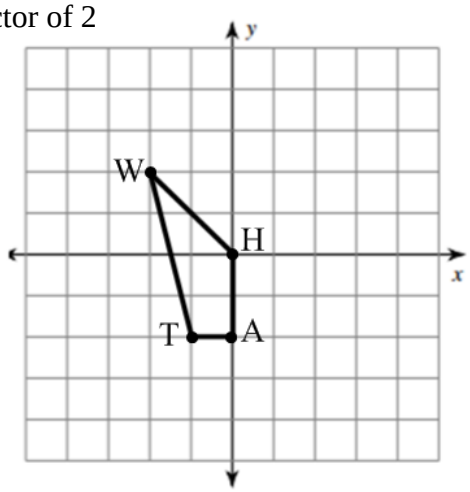


Dilate the following about center $(0,0)$, given each scale factor. Be sure to label the images properly.

37. Scale factor of $\frac{1}{4}$



38. Scale factor of 2

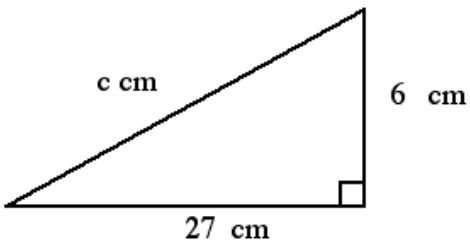


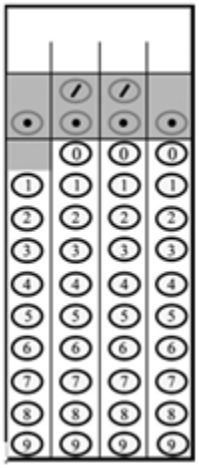
For each figure: A) draw all lines of symmetry, and B) determine if it has rotational symmetry. If there is rotational symmetry, state the angle of rotation.

39.

40.

41. Find the missing measure in the right triangle to the nearest tenth.





42. Identify the polygon by its sides. Then determine whether it appears to be regular or not regular. If not regular, explain why.

_____

43. Find the sum of the measures of the interior angles in the figure. _____

Find the measure of one interior angle and one exterior angle of the given polygon. If necessary, round to the nearest degree.

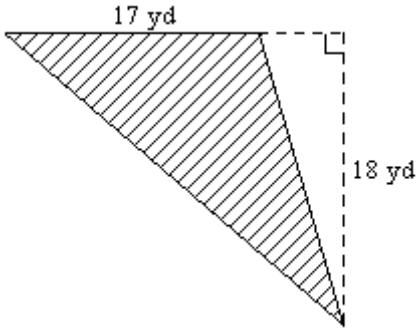
44. a regular heptagon _____

45. The sum of the measures of nine exterior angles of a convex decagon is 292.

What is the measure of the tenth angle to the nearest whole number? _____

Find the <u>area</u> of each triangle to the nearest whole number.

46.



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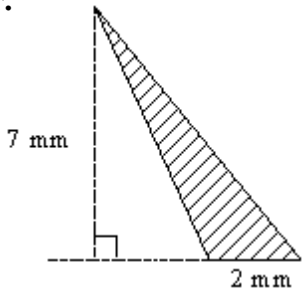
47.



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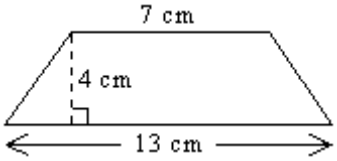
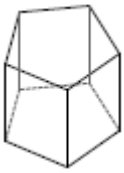
Find the <u>area</u> of the trapezoid to the nearest whole number. _____

48.

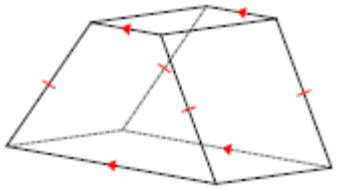


49. **Identify each solid.**

a)



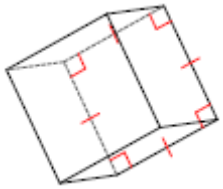
b)



c)

d)

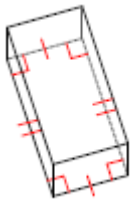
e)



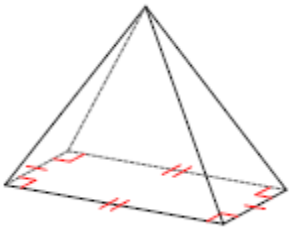
f)

g)

h)



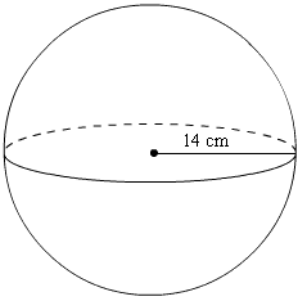
i)



j)

Find the <u>lateral area and surface area</u> of each. Use 3.14 for pi. Round to the nearest hundredth.

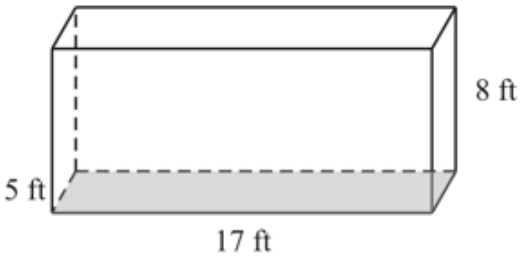
50.



LA = <u>N/A</u>_____

SA = _____

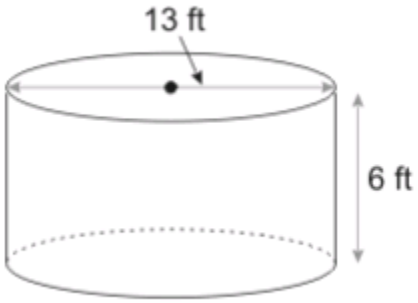
51.



LA = _____

SA = _____

52.

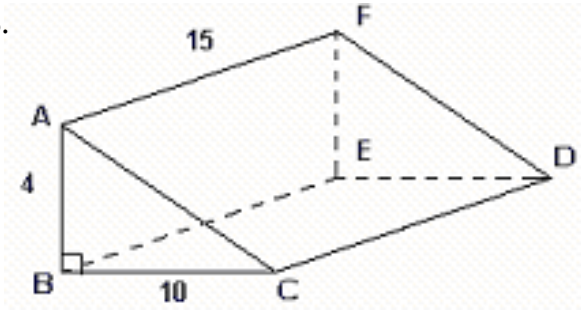


LA = _____

SA = _____

Find the <u>lateral area and surface area</u> of each. Use 3.14 for pi. Round to the nearest hundredth.

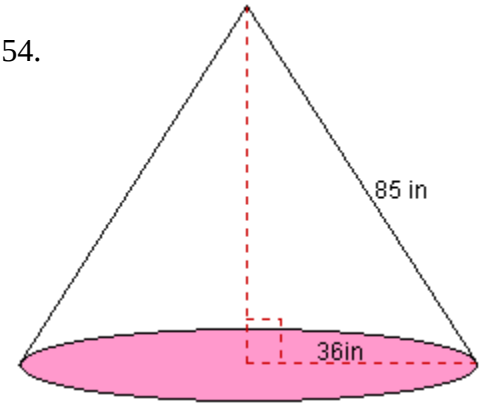
53.



LA = _____

SA = _____

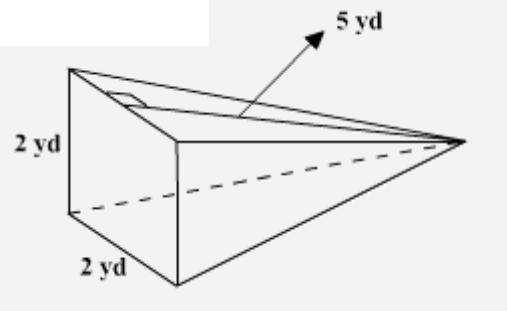
54.



LA = _____

SA = _____

55.



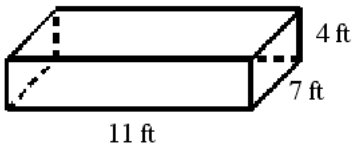
LA = _____

SA = _____

56. A can of corn has a radius of 2.5 cm and a height of 13 cm. What is the area of the wrapper on the can to the nearest tenth?

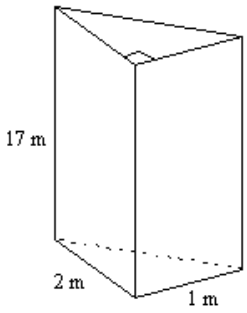
Find the volume of each solid. Use 3.14 for pi. Round to the nearest tenth, if necessary.

57.

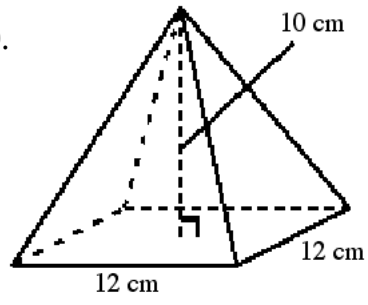


Not drawn to scale

58.

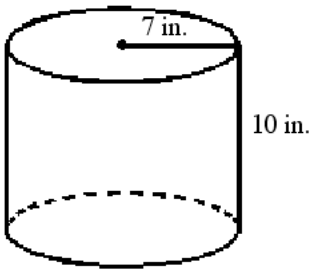


59.



Not drawn to scale

60.



Not drawn to scale