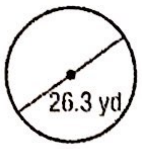
Name: key Date: Class:

Unit 6 Geometry Study Guide

ANSWER KEY ONLINE AT ZHANG7MATH.WEEBLY.COM

What is the circumference of the circle? Use 3.14 for π. Round to the nearest tenth.

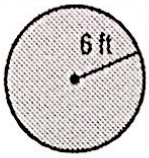


$C = 2\pi r$ or $C = \pi D$

$C = (3.14)(26.3)$

$C = 82.6$ yd

What is the area of the circle? Round to the nearest tenth. Use 3.14 for π.



$A = \pi r^2$

$A = (3.14)(6)^2$

$A = 113\ ft^2$

A rectangular hat box has a volume of 5,184 cubic inches. The box is 2 feet long by 18 inches wide. What is the hat box's height?

2 ft = 24 in

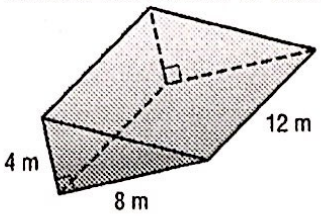
$V = L \times W \times H$

$5{,}184 = (24)(18)H$

$\frac{5{,}184}{432} = \frac{432H}{432}$

$H = 12$ in

What is the volume of the right triangular prism?



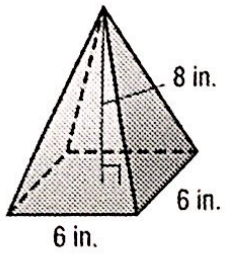
$V = BH$

$V = (\frac{1}{2}bh)H$

$V = (\frac{1}{2} \cdot 4 \cdot 8)12$

$V = 192\ m^3$

What is the volume of the square pyramid?

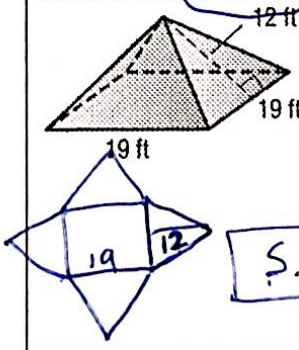


$V = \frac{1}{3}BH$

$V = \frac{1}{3}(6 \times 6)8$

$V = 96\ in^3$

What is the surface area of the square pyramid?



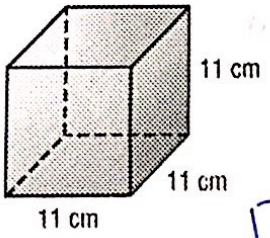
(4 triangles) + (square)

$4(\frac{1}{2} \cdot 19 \cdot 12) + 19 \cdot 19$

$456 + 361$

$S.A = 817\ ft^2$

What is the surface area of the cube?

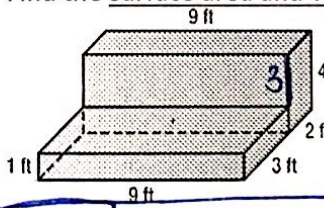


6 squares

$6(11 \cdot 11)$

$S.A = 726\ cm^2$

Find the surface area and volume of the composite figure.



$V = (1 \times 9 \times 3) + (4 \times 9 \times 2)$

$V = 27 + 72$

$V = 99\ ft^2$

S.A

Front prism.

F $9 \times 1 = 9$

L+R $(1 \times 3)2 = 6$

T+B $(3 \times 9)2 = 54$

Back prism

T+B $(9 \times 2)2 = 36$

L+R $(2 \times 4)2 = 16$

Back $(4 \times 9) = 36$

Front $3 \times 9 = 27$

69 + 115

S.A = $184\ ft^2$

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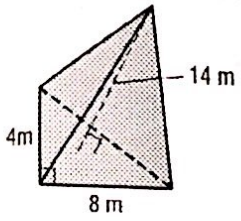
What is the volume of the triangular pyramid? Round to the nearest tenth if necessary.

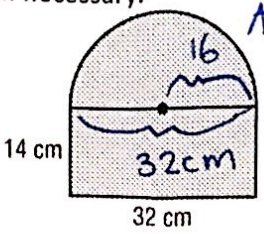


$V = \frac{1}{3}BH$

$V = \frac{1}{3}(\frac{1}{2} \cdot 4 \cdot 8)14$

$V = 74.7 m^3$

What is the area of the figure? Round to the nearest tenth if necessary.



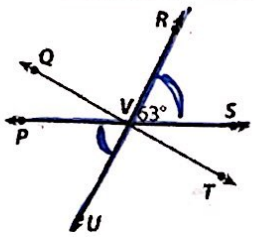
A = ½ circle + rectangle

$A = \frac{1}{2}(\pi r^2) + L \cdot W$

$A = \frac{1}{2}[3.14(16)^2] + (14 \cdot 32)$

$A = 401.92 + 448$

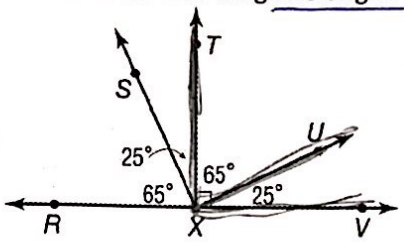
$A = 849.9 cm^2$



What is the measure of ∠PVU? From the def. of vertical angles, ∠PVU = 63°

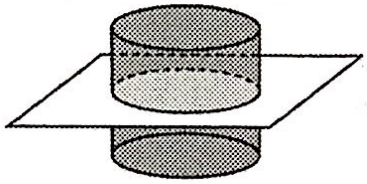
Which describes the relationship between ∠QVP and ∠PVU? Since these angles are next to each other, they are adjacent angles.

Which of the following two angles are complementary?



complementary angles are two angles that add up to 90°.

∠TXU and ∠UXV are complementary
$65° + 25° = 90°$
∠TXS and ∠SXR are complementary



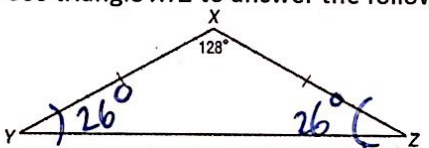
The base of the cylinder above is a circle. Name the shape of the cross section of the cylinder.

circle

What would be the cross section of the cylinder that is sliced horizontally? circle

If cut vertically, the cross section will be a rectangle

Use triangle XYZ to answer the following questions.



Part A Classify angle X. obtuse

Part B Classify angle Y. acute

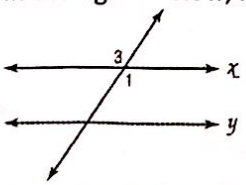
Part C Classify the triangle by its sides and by its angles. Isosceles triangle.

Part D If ∠Y is congruent to ∠Z, evaluate the measure of ∠Z. Explain. $\angle X + \angle Y + \angle Z = 180$

$128 + 2n = 180$

$n = 26$

In the figure below, line x is parallel to line y.



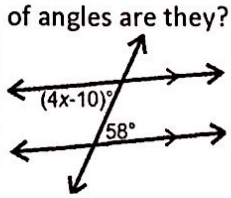
Measure ∠1 is 130°, what is measure ∠3?

∠3 = 130

What type of angles are ∠1 and ∠3?

vertical angles

If the two lines are parallel, find the value of x. What kind of angles are they?



Alternate interior.

$4x - 10 = 58$

$+10 \quad +10$

$\frac{4x}{4} = \frac{68}{4}$

$x = 17$

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Unit 6 Geometry Study Guide Part B

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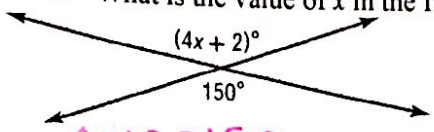
1. What is the value of x in the figure?

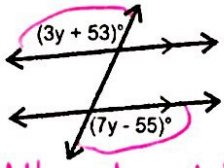


vertical angles are congruent.

$4x+2=150$
$-2 \quad -2$
$\frac{4x}{4} = \frac{148}{4}$

$x=37$

2. If the two lines are parallel, find the value of x. What kind of angles are they?

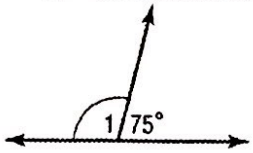


Alternate exterior angles are $\cong$

$3y+53=7y-55$
$-7y \quad -7y$
$-4y+53=-55$
$-53 \quad -53$
$\frac{-4y}{-4} = \frac{-108}{-4}$

$y=27$

3. What is the measure of ∠1 in the figure?



supplementary angles

$\angle 1+75=180$
$-75 \quad -75$

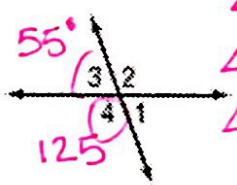
$\angle 1=105$

4. What is the measure of one interior angles of an equilateral triangle?

$\frac{3x}{3} = \frac{180}{3}$

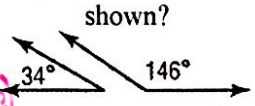
$x=60$

5. If measure ∠4 =125°, evaluate the degree measure of ∠1, ∠2, and ∠3. Explain your why your measurement make sense.



$\angle 1 = 180-125 = 55°$ (Suppl.)
$\angle 2 = 125°$ (Vert.)
$\angle 3 = 55°$ (Suppl.)

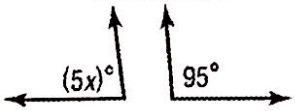
6. What is the classification of the pair of angles shown?



$34+146=180°$

Two angles add up to 180° are supplementary angles.

7. The angles shown are supplementary. What is the value of x ?

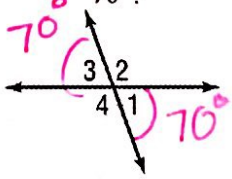


$5x+95=180$
-95

$\frac{5x}{5} = \frac{85}{5}$

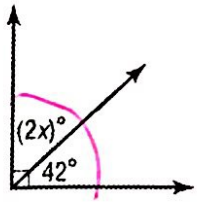
$x=17$

8. In the figure at the right, what is $m\angle 1$ if $m\angle 3 = 70°$?



$\angle 1 = 70°$
$\angle 3 = 70°$
$\angle 2 = 110°$
$\angle 4 = 110°$

9. What is the value of x in the figure at the right



Complementary angles.

$2x+42=90$
$-42 \quad -42$

$\frac{2x}{2} = \frac{48}{2}$

$x=24$

10. Angle 1 and angle 2 are supplementary. If $m\angle 1 = 63°$, what is $m\angle 2$?

$63+\angle 2=180$
$-63 \quad -63$

$\angle 2=117°$

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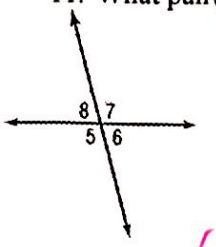
11. What pair(s) of angles is/are congruent?

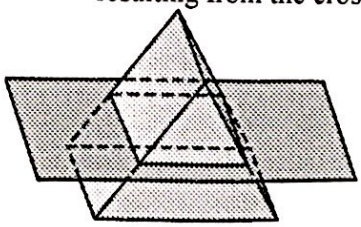


$\angle 8 \cong \angle 6$

$\angle 7 \cong \angle 5$

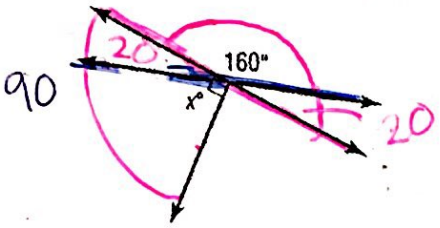
(vertical angles)

12. Which of the following describes the shape resulting from the cross section below?



rectangle.

13. What is the value of x?

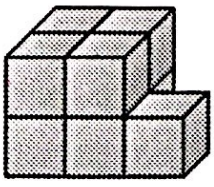


$20 + x = 90$

$-20 \quad -20$

$x = 70°$

14. Javier built the three-dimensional figure below using blocks.



front

$V = (2 \times 2 \times 2) + (1 \times 1 \times 1)$

$V = 8 + 1$

$V = 9 \text{ units}^3$

What is the surface area and volume of the figure?

Big Cube

$6(2 \times 2) = 24$

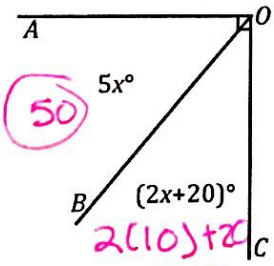
Small cube

$6(1 \times 1) = 6$

$24 + 6 - 2(1)$

28 unit^2

15. Set up and solve an equation to find the value of x. Find the measurements of $\angle AOB$ and $\angle BOC$.



$2(10) + 20$

$20 + 20$

40

$5x + 2x + 20 = 90$

$7x + 20 = 90$

$-20 \quad -20$

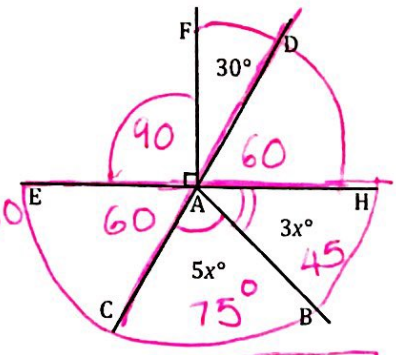
$\frac{7x}{7} = \frac{70}{7}$

$x = 10$

$\angle AOB = 50°$

$\angle BOC = 40°$

16. Set up and solve an equation to find the value of x. Find the measurements of angles $\angle BAC$ and $\angle BAH$.



$60 + 5x + 3x = 180$

$60 + 8x = 180$

$-60 \quad -60$

$\frac{8x}{8} = \frac{120}{8}$

$x = 15$

$\angle BAC = 75°$

$\angle BAH = 45°$

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