

NAME: Answer Key

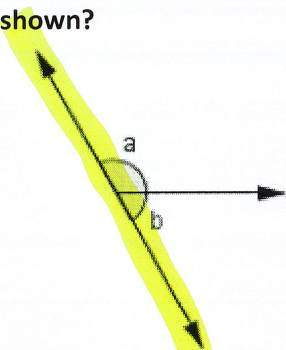
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Geometry Part 3A Study Guide – Math 6A

**PART A**

PART 1 (Multiple Choice): Circle the correct answer.

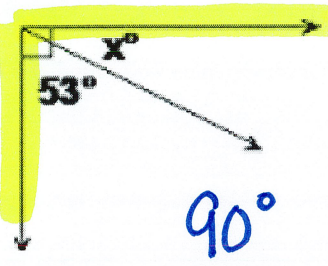
1. What is the classification of the pair of angles shown?



A.) supplementary  
 B.) vertical  
 C.) complementary

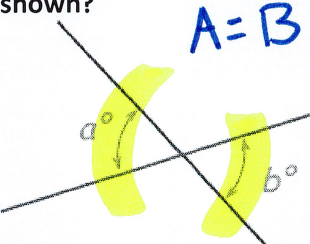
$180^\circ$

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



A.) supplementary  
 B.) vertical  
 C.) complementary

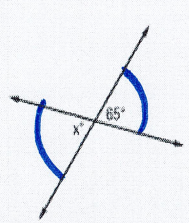
3. What is the classification of the pair of angles shown?



A.) supplementary  
 B.) vertical  
 C.) complementary

$A = B$

4. What is the measure of angle X?

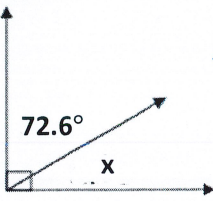


A.) 115 degrees  
 B.) 65 degrees  
 C.) 90 degrees  
 D.) 180 degrees

$A = B$

PART 2 (Short Answer): Show all work.

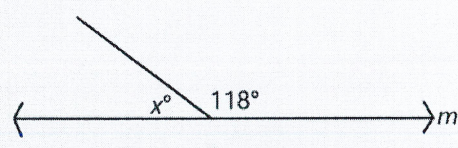
5. Set up & solve an equation to find the measure of angle x.



$$\begin{array}{r} 72.6 + x = 90 \\ -72.6 \quad -72.6 \\ \hline x = 17.4 \end{array}$$

measure of angle x = 17.4 degrees

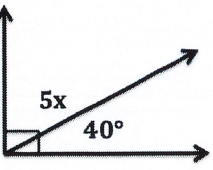
6. Set up & solve an equation to find the measure of angle m.



$$\begin{array}{r} 118 + x = 180 \\ -118 \quad -118 \\ \hline x = 62 \end{array}$$

measure of angle m = 62 degrees

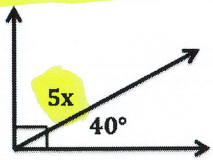
7. Set up & solve an equation to find the value of x.



$$\begin{array}{r} 5x + 40 = 90 \\ -40 \quad -40 \\ \hline 5x = 50 \\ \frac{5x}{5} = \frac{50}{5} \\ x = 10 \end{array}$$

x = 10

8. Use your answer from question 7 to find the measure of the missing angle. Show your work.

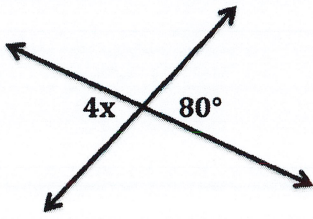


$$\begin{array}{r} 5x \\ 5(10) \\ 50 \end{array}$$

50 degrees



9. Set up & solve an equation to find the value of x.

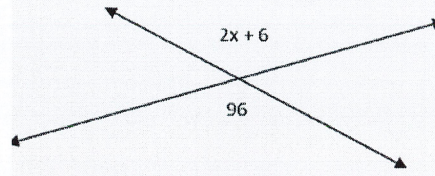


$$\frac{4x}{4} = \frac{80}{4}$$

$$x = 20$$

$$x = \underline{20}$$

10. Set up & solve an equation to find the value of x.



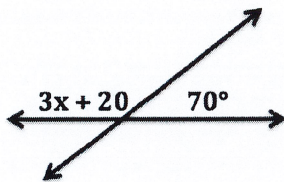
$$\begin{array}{r} 2x + 6 = 96 \\ -6 \quad -6 \end{array}$$

$$\frac{2x}{2} = \frac{90}{2}$$

$$x = 45$$

$$x = \underline{45}$$

11. Set up & solve an equation to find the value of x.



$$3x + 20 + 90 = 180$$

$$3x + 90 = 180$$

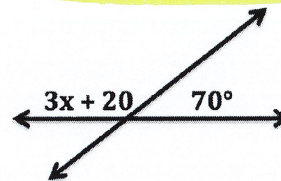
$$\begin{array}{r} -90 \quad -90 \end{array}$$

$$\frac{3x}{3} = \frac{90}{3}$$

$$x = 30$$

$$x = \underline{30}$$

12. Use your answer from question 11 to find the measure of the missing angle. Show your work.



$$3x + 20$$

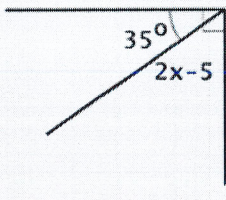
$$3(30) + 20$$

$$90 + 20$$

$$\underline{110}$$

degrees

13. Set up & solve an equation to find the value of x.



$$35 + 2x - 5 = 90$$

$$30 + 2x = 90$$

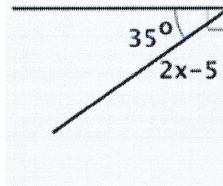
$$\begin{array}{r} -30 \quad -30 \end{array}$$

$$\frac{2x}{2} = \frac{60}{2}$$

$$x = 30$$

$$x = \underline{30}$$

14. Use your answer from question 13 to find the measure of the missing angle. Show your work.



$$2x - 5$$

$$2(30) - 5$$

$$60 - 5$$

$$55$$

$$\underline{55}$$

degrees



**PART B**

1. Determine if the angles below form a triangle. Show your work. State YES or NO on the line.  
 $95^\circ, 7^\circ, 78^\circ$

$$95 + 7 = 102$$

$$102 + 78 = 180 \checkmark$$

Yes

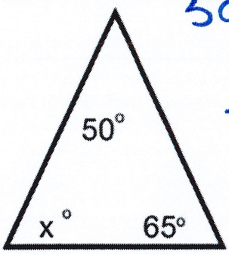
2. Determine if the angles below form a triangle. Show your work. State YES or NO on the line.  
 $116^\circ, 9^\circ, 60^\circ$

$$116 + 9 = 125$$

$$125 + 60 = 185 \neq 180$$

No

3. Write and solve the equation to find the value of the missing angle. SHOW YOUR WORK.



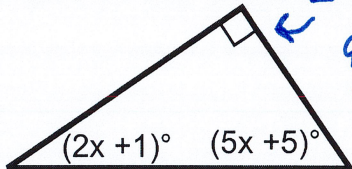
$$50 + 65 + x = 180$$

$$115 + x = 180$$

$$\begin{array}{r} -115 \\ \hline x = 65 \end{array}$$

65 degrees

4. Write and solve the equation to find the value of x. SHOW YOUR WORK.  $\square = 90$



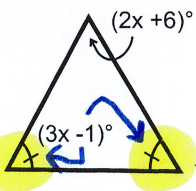
$$90 + (2x+1) + (5x+5) = 180$$

$$7x + 96 = 180$$

$$\begin{array}{r} -96 \\ \hline 7x = 84 \\ \hline x = 12 \end{array}$$

x = 12 degrees

5. Write and solve the equation to find the value of the missing angle. SHOW YOUR WORK.



$$2x + 6 + 3x - 1 + \text{Missing Angle} = 180$$

$$8x + 4 = 180$$

$$\begin{array}{r} -4 \\ \hline 8x = 176 \\ \hline x = 22 \end{array}$$

x = 22 degrees

Congruent

6. Using the Triangle Inequality Theorem, determine if these sides form a triangle. SHOW YOUR WORK.  
 1, 5, 1

$$\frac{1}{\quad} + \frac{5}{\quad} > \frac{1}{\quad}$$

$$\frac{5}{\quad} + \frac{1}{\quad} > \frac{1}{\quad}$$

$$\frac{1}{\quad} + \frac{1}{\quad} < \frac{5}{\quad}$$

Do the sides form a triangle? No

7. Find the range of lengths for the third side of the triangle using the lengths of the other two sides  
 7 ft and 13 ft

$$S + M > L$$

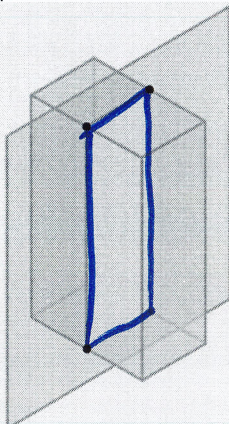
$$\text{small} + \text{Medium} > \text{Large}$$

$$\frac{7}{\quad} + \frac{13}{\quad} > \frac{x}{\quad} \quad (20)$$

$$\frac{x}{\quad} + \frac{7}{\quad} > \frac{13}{\quad} \quad (6)$$

RANGE: 6 < x < 20

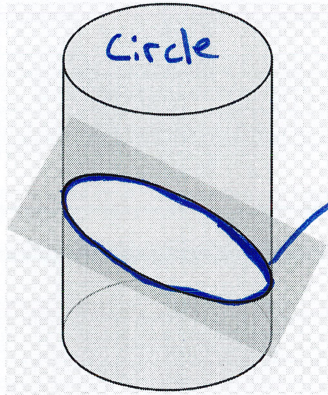
8. What would be the cross section of a rectangular prism that is sliced vertically?



- A.) rectangle
- B.) triangle
- C.) pentagon
- D.) trapezoid

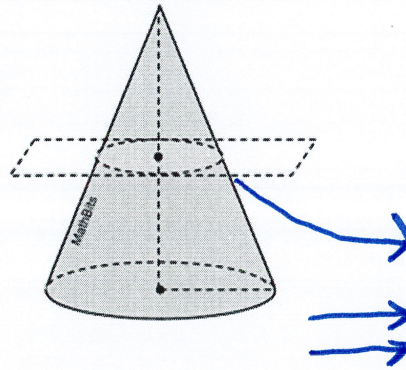


9. Identify the shape of the cross section.



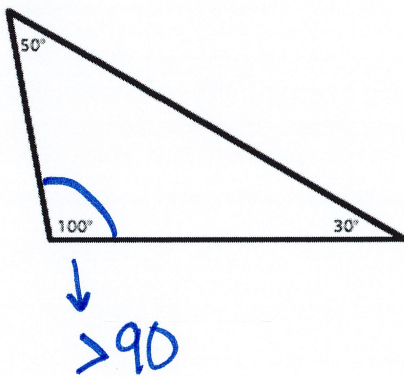
- A.) rectangle
- B.) ellipse
- C.) triangle
- D.) trapezoid

10. What would be the cross section of a cone that is sliced horizontally?



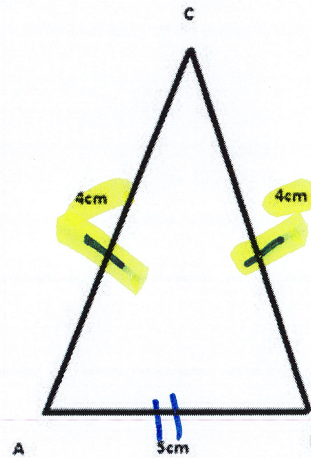
- A.) rectangle
- B.) ellipse
- C.) triangle
- D.) circle

11. What is the classification of the triangle by its angles?



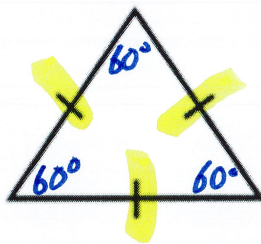
- A.) obtuse
- B.) right
- C.) acute

12. What is the classification of the triangle by its sides?



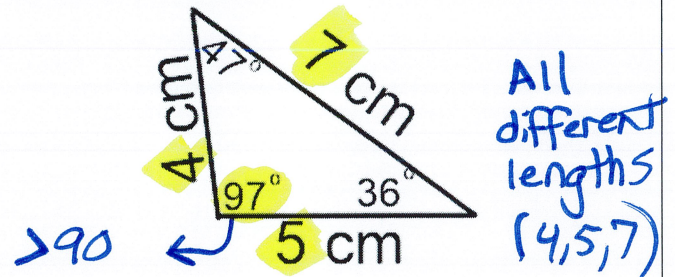
- A.) equilateral
- B.) scalene
- C.) isosceles

13. What is the classification of the triangle by its angles and by its sides?



- A.) acute, equilateral
- B.) right, equilateral
- C.) obtuse, isosceles
- D.) obtuse, equilateral

14. What is the classification of the triangle by its angles and by its sides?



- A.) acute, isosceles
- B.) right, equilateral
- C.) obtuse, scalene
- D.) right, scalene