

Geometry

Problem Set #5

Name: _____

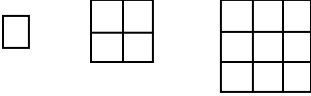
Period: _____

1. Use **inductive reasoning** to fill in the next two blanks in the pattern.

a) z, 50, y, 40, x, 30, _____, _____

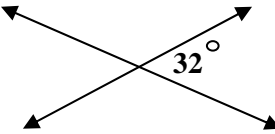
b) 4,9,6,11,8,13,10, _____, _____

c) M,T,W,T, _____, _____

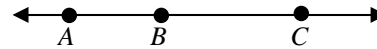
2.  What comes next? Draw here:

3. Find a counter example to prove the statement false.
If a number is even, then the number must be a multiple of 4.

4. Use **deductive reasoning** to answer the question.
If you are late to practice three times, you will not play in the next game. Tim was late for the third time today, therefore, _____.

5. Find all of the angles in this diagram 

6. a) If $AB = 14\text{ cm}$ and $AC = 56\text{ cm}$, then find BC .



b) If $AB = x + 7$, $BC = 3x - 5$ and $AC = 30\text{ cm}$, find x .

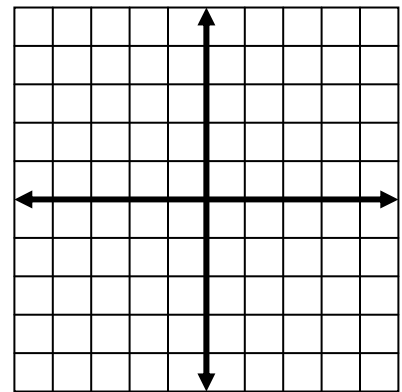
Use for #6

7. Identify the type of reasoning in each of the following as inductive or deductive.
- a. If you cheat on a test you will go to the dark side. Anakin cheated on a test; therefore, he concluded that he is going to the dark side.
 - b. Tim watched as each of 3 freshman walked up to the door, tried to open it but could not open the door. He concluded that the door was locked.
 - c. Frodo saw 4 Orcs in a row. He went up to the first one but could not lift it. He went to the second and could not lift it. He could not lift the third Orc. He concluded that he could not lift the fourth Orc.
 - d. If a number is less than 100, then 12 less than that number is also less than 100.
 - e. Anakin has higher midi-chlorians than Darth Sidous. Darth Sidous has higher midi-chlorians than Yoda. Anakin concludes that he has a higher midi-chlorian count than Yoda.

8. $M(3,-2)$ is the midpoint of \overline{QR} . If endpoint Q has coordinates $(-1, 4)$, find the coordinates of **endpoint** R .
9. From the following set of numbers $\{2,5,8,10\}$ state which of the following are true or false if two numbers are drawn randomly from the set.
- The sum of any two numbers is greater than 12.
 - The product of any two numbers is even.
 - The square root of at least one of the numbers is less than 3.
 - Five is a factor of at least one of the numbers.

10. Graph and label points A and B . $A(-1,3)$ $B(4,-4)$
Then, find :

- AB (round to nearest tenth)
- the midpoint of segment AB



11. Ray RX bisects $\angle ARC$. $m\angle ARX = 6x+4$, and $m\angle XRC = 11x-21$. **Draw a sketch**, then find $m\angle ARC$.
12. Write the converse, contrapositive, and inverse of this statement.

Implication: If I go shopping, then I am happy.

Converse: _____

Contrapositive: _____

Inverse: _____