

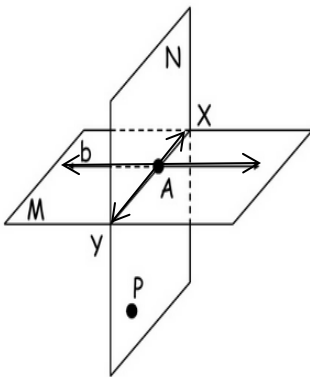
1) Euclid was the first mathematician of his time to use the axiomatic method which consisted of four parts:

- a) \_\_\_\_\_ terms, which lead to
- b) \_\_\_\_\_, which lead to
- c) \_\_\_\_\_ (also called axioms, which are accepted as true), which lead to
- d) \_\_\_\_\_ (which are proven by deductive reasoning).

2) Determine the term suggested by each of the following:

- a) The tip of a pencil.
- b) The ceiling in your classroom.
- c) Telephone wires.
- d) The lid of a box.
- e) Freckles on your face.

3) Use the diagram to classify each statement as true or false:

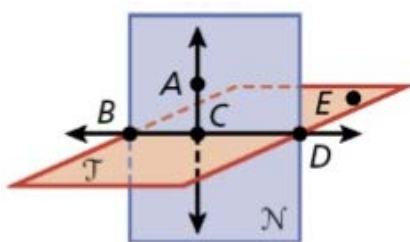


- a)  $P$  is in  $M$ .
- b)  $b$  is in  $M$ .
- c)  $\overline{YX}$  contains  $P$ .
- d)  $M$  contains  $\overline{YX}$ .
- e)  $A$  is on  $b$ .
- f)  $A$  and  $X$  are in  $M$ .
- g)  $N$  contains  $P$ .
- h)  $\overline{AX}$  ends at  $X$ .
- i)  $\overline{YX}$  contains 3 points.

4) Use the diagram above to answer the questions:

- a) Are points  $Y$ ,  $X$  and  $A$  collinear?
- b) Name the line that intersects  $\overline{YX}$ .
- c) Name a pair of opposite rays.
- d) What geometric figure is formed when two planes intersect?

5) Use the diagram below to answer the questions:

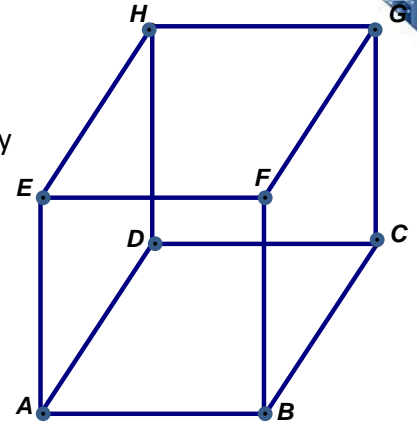


- a) Name a point on  $\overline{CD}$ .
- b) Name the plane containing  $E$ ,  $D$ , and  $B$  in two different ways.
- c)  $\overline{CB}$  and  $\overline{CD}$  are an example of \_\_\_\_\_.
- d) Find and name an angle formed by the intersection of the two lines.
- e) Name the vertex and sides of the angle found in part (d).
- f) Are points  $A$ ,  $C$  and  $E$  coplanar?
- g) Is  $\angle C$  an acceptable name for an angle in this diagram? Why or why not?



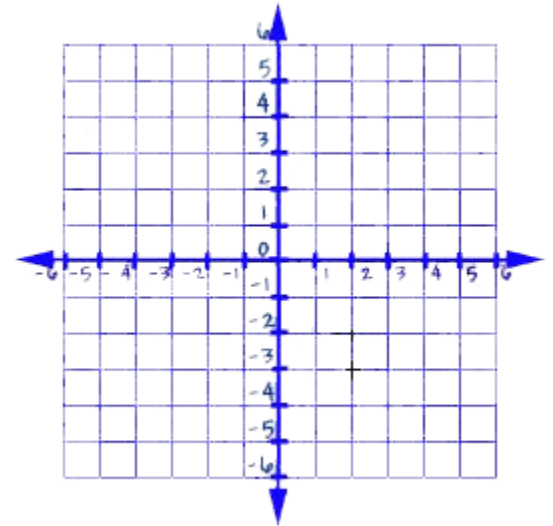
6) Use the diagram at the right to answer the questions:

- Name the intersection of *Plane ABC* and *Plane HAD*.
- Since the angles at the vertices of a cube all measure  $90^\circ$ , we say that the angles are \_\_\_\_\_ and the segments creating them are \_\_\_\_\_.
- Name and mark all segments of the cube that are parallel to  $\overline{AB}$ .



7) Sketch and label the following:

- a ray with endpoint *M* that contains *N*.
- Plane R* containing  $\overline{AB}$  and  $\overline{DE}$  which intersect at *Point P*. Add *C* on *Plane R* so that it is not collinear with  $\overline{AB}$  or  $\overline{DE}$ .
- $\overline{CR}$  on a coordinate plane contains  $C(-2, 4)$  and  $R(4, -4)$ . Graph and label *C* & *R* and add *point A* so that *A* bisects  $\overline{CR}$ . What are the coordinates of *A*?

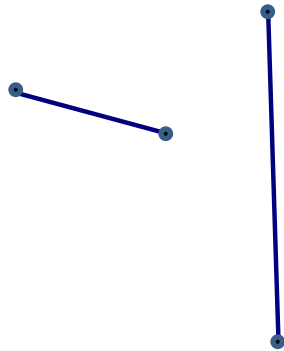


8) Which of the following is an incorrect way to name a line?

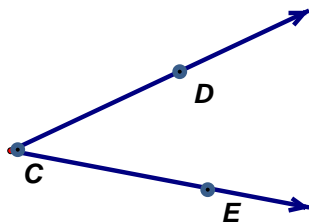
(multiple choice)

- By the closest points on the line.
- By a single lowercase letter.
- By three points on the line.
- By any two points on the line.

9) Construct a segment whose length is the difference of the two given segments.

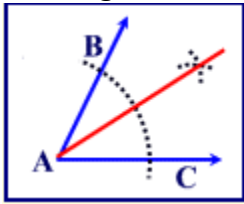


10) Construct and label an angle,  $\angle ECF$ , whose measure is twice the measure of the given angle.

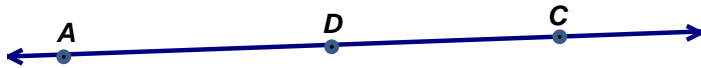




11) The diagram below shows the final step of which construction?

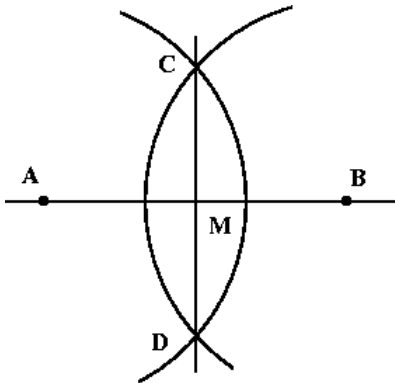


12) Which of the following constructions at point  $D$  in the figure below will produce an angle that measures  $45^\circ$ ? (multiple choice)



- A) Constructing the bisector of  $\angle ADC$  only.
- B) Constructing a circle with center  $D$  only.
- C) Constructing one perpendicular line.
- D) Constructing a circle with center  $D$  and a perpendicular line.
- E) Constructing a perpendicular line and an angle bisector.

13) The figure below shows the construction of the perpendicular bisector of  $\overline{AB}$  using a compass. Which of the following statements must always be true in the construction of the perpendicular bisector?



Answer YES or NO for each statement.

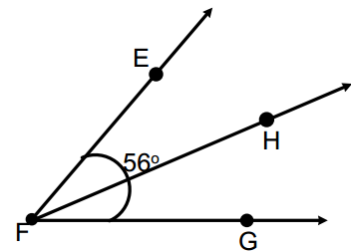
- a)  $AC = BC$
- b)  $AC = BD$
- c)  $AM = MB$
- d)  $MC = MB$

14) Copy  $\overline{AB}$ . Divide it into 4 segments of equal length.

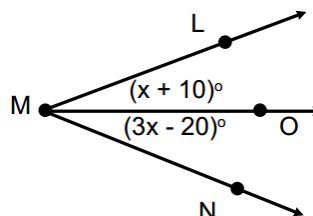


15) Angle Bisectors:

a)  $\angle EFG$  is bisected by  $\overline{FH}$ . The  $m\angle EFG = 56^\circ$ . Find the measures of both unmeasured angles.



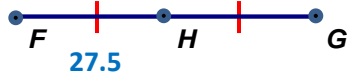
b)  $\overline{MO}$  bisects  $\angle LMN$ . Find the value of  $x$ .





16) Segment Bisectors:

a)



$GH = \underline{\hspace{2cm}}, FG = \underline{\hspace{2cm}}$

b)

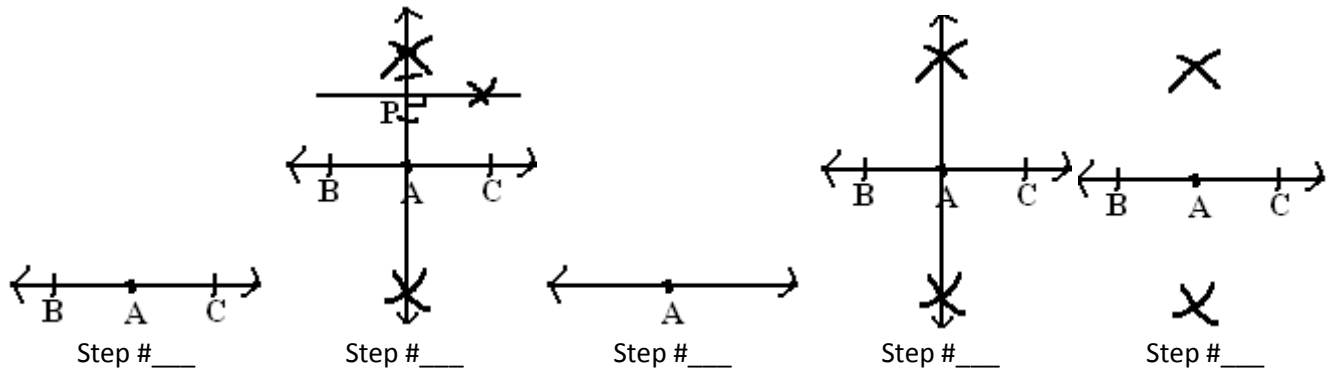


$M$  is the midpoint of  $\overline{AB}$

$x = \underline{\hspace{2cm}}, AM = \underline{\hspace{2cm}}$

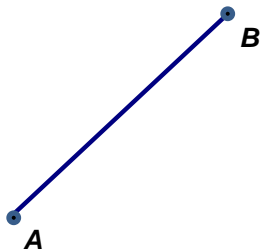
17) Two coplanar lines never intersect. What relationship do they have to each other?

18) One method of constructing parallel lines is given below, rearrange the steps into the correct order:



19) Definition: A circle is the set of all points \_\_\_\_\_ from a given point.

20) Construct a circle using the given diameter,  $\overline{AB}$ . Mark and label point C on the circle, name one arc formed.





**ANSWER SHEET**

- 1) a) \_\_\_\_\_  
 b) \_\_\_\_\_  
 c) \_\_\_\_\_  
 d) \_\_\_\_\_

- 2) a) \_\_\_\_\_  
 b) \_\_\_\_\_  
 c) \_\_\_\_\_  
 d) \_\_\_\_\_  
 e) \_\_\_\_\_

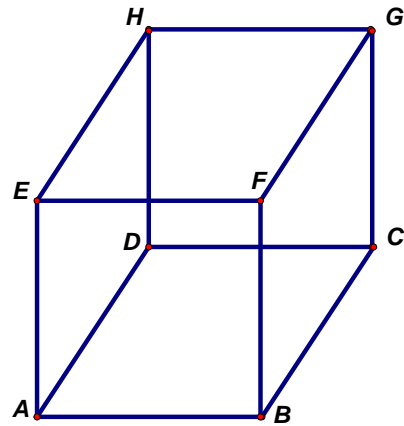
- 3) a) T / F  
 b) T / F  
 c) T / F  
 d) T / F  
 e) T / F  
 f) T / F  
 g) T / F  
 h) T / F  
 i) T / F

- 4) a) \_\_\_\_\_  
 b) \_\_\_\_\_  
 c) \_\_\_\_\_ , \_\_\_\_\_  
 d) \_\_\_\_\_

- 5) a) \_\_\_\_\_  
 b) \_\_\_\_\_ , \_\_\_\_\_  
 c) \_\_\_\_\_ , \_\_\_\_\_  
 d) \_\_\_\_\_ , \_\_\_\_\_  
 e) \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_  
 f) \_\_\_\_\_

- g) \_\_\_\_\_ , \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- 6) a) \_\_\_\_\_  
 b) \_\_\_\_\_ , \_\_\_\_\_  
 \_\_\_\_\_  
 c) \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

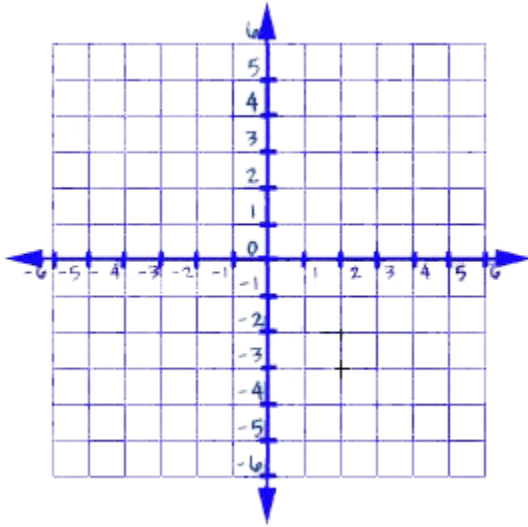


- 7) a)

- b)



c)



A(\_\_\_\_ , \_\_\_\_)

8) \_\_\_\_\_

9)

10)

11) \_\_\_\_\_

12) \_\_\_\_\_

13) a) YES / NO

b) YES / NO

c) YES / NO

d) YES / NO

14)

15) a) \_\_\_\_\_ , \_\_\_\_\_

b) \_\_\_\_\_

16) a) \_\_\_\_\_ , \_\_\_\_\_

b) \_\_\_\_\_ , \_\_\_\_\_

17) \_\_\_\_\_

18) \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

19) \_\_\_\_\_

20) \_\_\_\_\_

