

Name: \_\_\_\_\_

2017-2018 Mathematics Teacher: \_\_\_\_\_



## **Summer Review for incoming Geometry students (all levels)**

Please complete this review packet for the  
**FIRST DAY OF CLASS.**

The problems included in this packet will provide you with the opportunity to practice the mathematical skills you have learned throughout the current school year and will help you to be prepared for the concepts you will learn in Geometry next school year. You are responsible for ALL the concepts covered in the packet. If you do not remember how to complete a problem, look it up in your notes or online. If you should misplace this packet, you can find a copy posted on the district website:

<http://nbhs.northbranfordschools.org/>

Your first **quiz** will be based on the material within this packet.

You will receive a **double homework grade** (worth 2 homework assignments) on this packet based on the following criteria:

- Work is received on the first day of class
- All problems are completed
- All work is shown

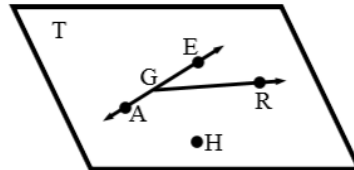
## Part I – GEOMETRY REVIEW

The following is a review of geometric terminology and proper notation, along with questions to be answered along the way:

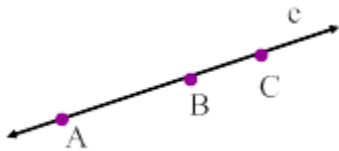
**Point** – an undefined term; shows location; has no size; represented by a small dot; named with a single capital letter.

•A Example, this is point A.

1. Name one point in the diagram on the right.

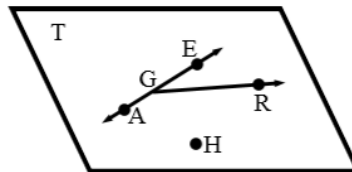


**Line** – an undefined term; an infinite number of points extending in opposite direction without end; no thickness; named with one lower case letter OR 2 points on the line.

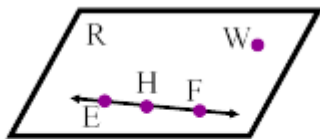


Example, this is  $\overline{AB}$ , or  $\overline{AC}$ , or  $\overline{CB}$ , or line e.

2. Name a line in the diagram on the right.

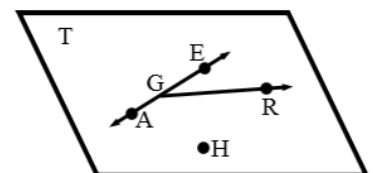


**Plane** – an undefined term; a flat surface extending without end; no thickness; named with one capital letter OR 3 points not on the same line

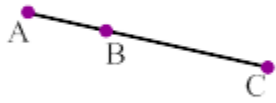


Example, this is plane EHW, or WFH, or EWF, or plane R.

3. Name the plane pictured on the right in more than one way.

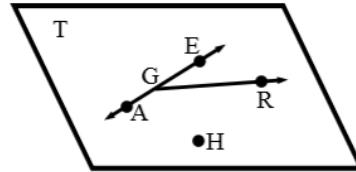


**Line segment** – part of a line containing 2 endpoints and all points in between; named by its endpoints with a segment bar.

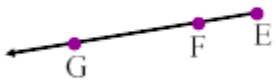


Example, this is  $\overline{AC}$ , or  $\overline{CA}$ .

4. Name a line segment in the diagram on the right.

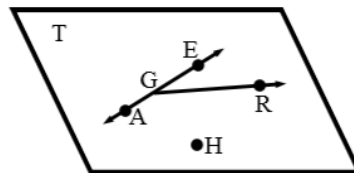


**Ray** – part of a line starting at one endpoint and containing all points of the line on one side of this endpoint; named by its endpoint and one other point on the ray. Note the arrowhead always points to the right when naming a ray.

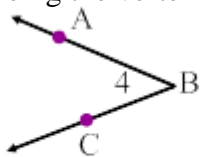


Example, this is  $\overrightarrow{EF}$ , or  $\overrightarrow{EG}$ .

5. Name a ray in the diagram on the right.

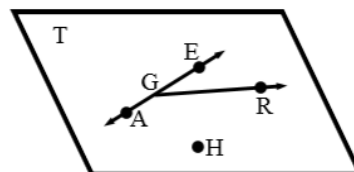


**Angle** – two rays with a common endpoint called the vertex; named with 3 points – the middle point being the vertex of the angle.



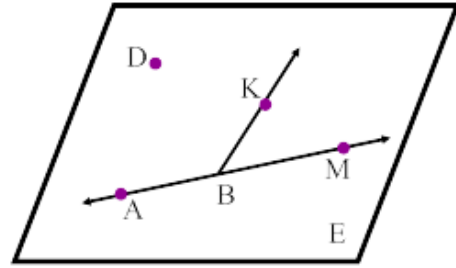
Example, this is  $\angle ABC$ , or  $\angle CBA$ , or  $\angle B$ , or  $\angle 4$ .

6. Name an angle in the diagram on the right.



7. Referring to the diagram on the right, name:

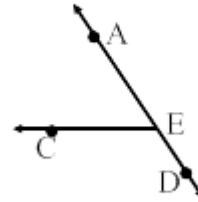
- a) a point
- b) the plane
- c) a line
- d) a ray
- e) two segments
- f) an angle



**Opposite rays** are rays with the same endpoint and extend out in opposite directions. For example, in the plane in #1 above,  $\overrightarrow{BA}$  and  $\overrightarrow{BM}$  are opposite rays.

8. Referring to the diagram to the right, name:

- a) a pair of opposite rays (read definition above)
- b)  $\overrightarrow{AE}$  in another way
- c)  $\overline{AD}$  in another way
- d)  $\angle DEC$  in another way



Refer to the diagram of a rectangular prism on the right for questions #9–15.

9. When segments or lines intersect, they intersect in a point. Where do  $\overline{RM}$  and  $\overline{OM}$  intersect?

10. Name a segment parallel to  $\overline{PT}$ .

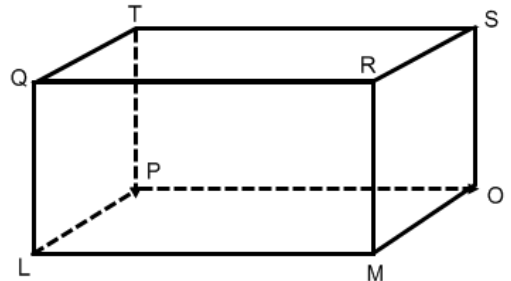
11. Which side of the box does QTP represent?

12. Name a line parallel to  $\overline{QM}$ .

13. Name a plane parallel to plane OML.

14. When planes intersect, they intersect in a line. Where do planes LMR and SOM intersect?

15. Name a segment **perpendicular** to (that means forms a right angle with)  $\overline{RM}$ .



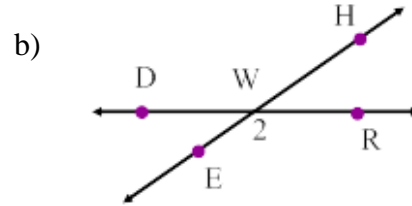
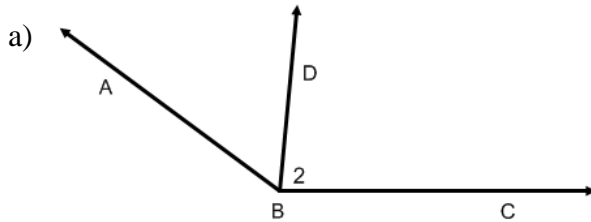
Use the diagram to the right to answer questions #16 & 17.

16. Name all the segments (there are 3).



17. Name all the rays (there are 4).

18. Name  $\angle 2$  in as many ways as possible (there are 2 other ways for each).



19. a) An acute angle measures \_\_\_\_\_

b) An obtuse angle measures \_\_\_\_\_

c) A straight angle measures \_\_\_\_\_

*Look these up if you don't know the answers.*

20. a) Complementary angles are \_\_\_\_\_

b) Supplementary angles are \_\_\_\_\_

21. a) What is the complement of a  $47^\circ$  angle?

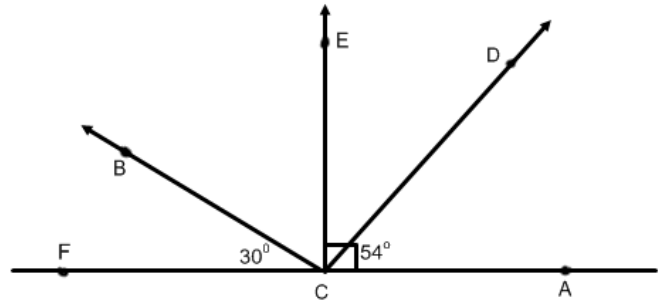
b) What is the supplement of a  $47^\circ$  angle?

For questions #22-23, refer to the diagram to the right.

22. a) Name one acute angle.

b) Name one obtuse angle.

The “box” in the diagram means that  $\overrightarrow{CE}$  and  $\overrightarrow{FA}$  are *perpendicular* (see question #9 for definition).



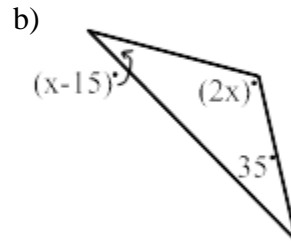
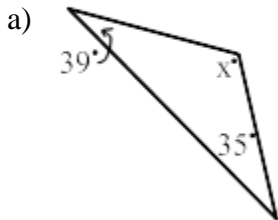
23. Find the measure of each angle.

a)  $\angle BCE$                       b)  $\angle BCD$

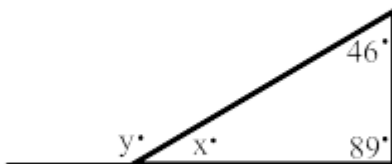
c)  $\angle ACB$

24. The sum of the measures of the interior angles of a triangle equals \_\_\_\_\_.

25. Find the values of the variables.

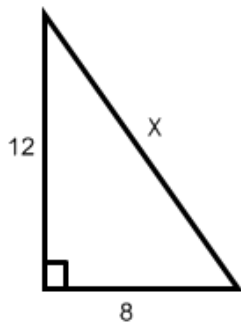


c) (Hint – First find x. To find y, what is the sum of x and y?)

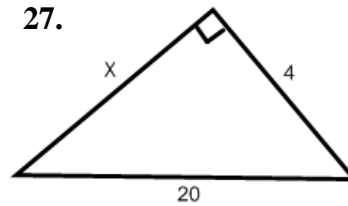


For #26 & 27, use the Pythagorean Theorem ( $a^2 + b^2 = c^2$ ) to find the missing length. Round answers to the nearest hundredth (2 places after the decimal point).

26.



27.



28. Find the area & perimeter of #26 above.

**Part II – ALGEBRA REVIEW**

**29.** Simplify the radicals.

a)  $\sqrt{32}$

b)  $\sqrt{125}$

c)  $2\sqrt{24}$

d)  $5\sqrt{16}$

**For #30-33, solve the equations. Round answers to the nearest hundredth.**

**30.**  $5x + 3 = 2x - 6$

**31.**  $x + 3 = 5 - 2(x - 4)$

**32.**  $4x - 5 + 2x = 16 - 3x$

**33.**  $7(x - 2) + 5 = 6 + 2(x + 8)$