

**Geometry**

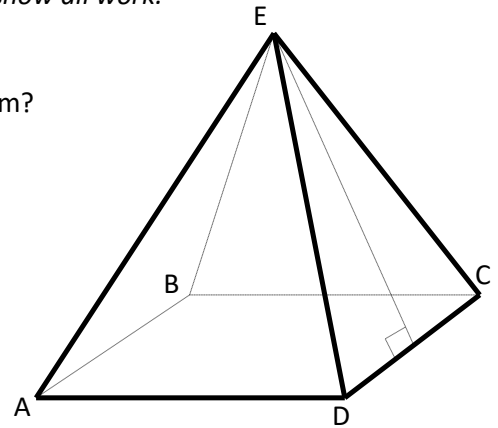
**First Semester Final Exam Review Packet**

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

Date: \_\_\_\_\_ Period: \_\_\_\_\_

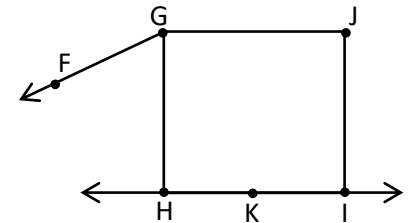
Answer each question as precisely and accurately as possible. When applicable, show all work.

For #1-7, use the diagram to the right.



1. Name a plane. What way of naming a plane isn't an option in this diagram?
2. Name three segments in the plane that you named for #1.
3. How many planes are shown?
4. Are A, D, and C collinear? Why or why not?
5. Are A, E, B, C coplanar? Why or why not? If not, name 4 points that are coplanar.
6. Name three segments that intersect at B.
7. Name the intersection of EBC and  $\overline{AB}$ .

For #8-11, use the diagram to the right.

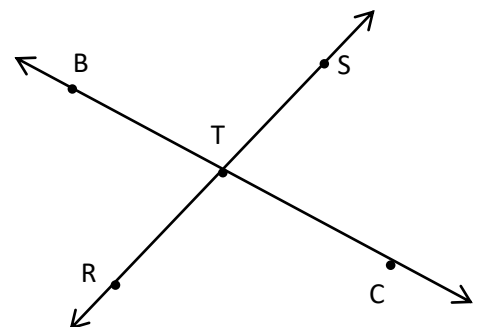


8. Name the ray.
9. Name the line 2 different ways. What way of naming a line isn't an option for the line in this diagram?
10. Name the angle formed in the lower right corner in three ways.
11. Draw and label a diagram to show the following:  $\overline{ST}$  lies in ABC

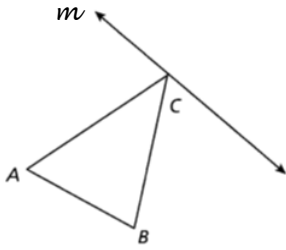
- |   |  |
|---|--|
| 12. Can the same ray be called $\overline{AB}$ and $\overline{BA}$ ?      YES    NO   | 13. Can the same ray be called $\overline{AB}$ and $\overline{AC}$ ?    YES    NO  |
| 14. Can the same segment be called $\overline{AB}$ and $\overline{BA}$ ?    YES    NO | 15. Can the same line be called $\overline{AB}$ and $\overline{BA}$ ?    YES    NO |
| 16. Can the same line be called $\overline{AB}$ and $\overline{BC}$ ?      YES    NO  |  |

For #17-21, use the diagram at the right. Classify as Yes or NO.

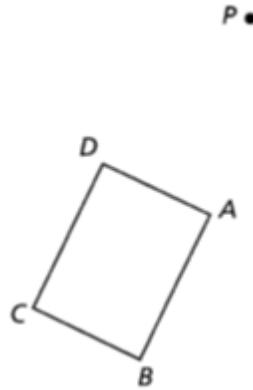
- |  |     |    |
|--|-----|----|
| 17. Are C, T, and B collinear?                       | YES | NO |
| 18. Is $\overline{RS}$ the same as $\overline{RT}$ ? | YES | NO |
| 19. Is $\overline{TR}$ the same as $\overline{RT}$ ? | YES | NO |
| 20. Are R, T, & C collinear?                         | YES | NO |
| 21. Do four rays start at T?                         | YES | NO |



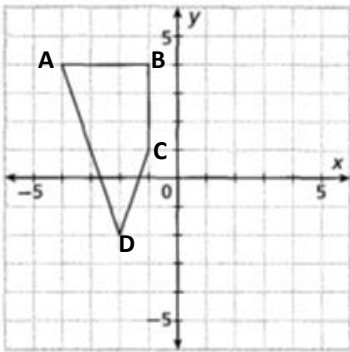
22. Reflect the preimage below over line  $m$ .



23. Rotate the preimage  $80^\circ$  counter-clockwise about P.

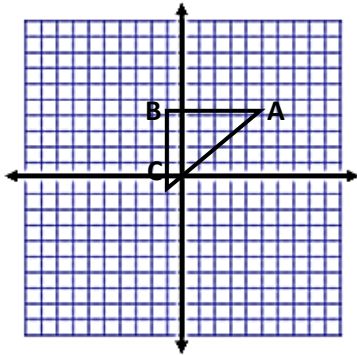


24.  $R_{O,270^\circ CCW}(ABCD)$



25. Write the following composition of transformations out in words:  $R_{O,270^\circ CCW} \circ T_{\langle -3,1 \rangle}(\triangle ABC)$ .

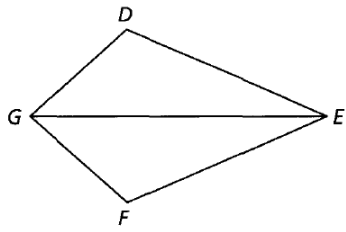
26.  $T_{\langle 5,0 \rangle} \circ R_{O,270^\circ CCW}(\triangle ABC)$



27. Given  $\triangle DEF \cong \triangle MNP$ . Complete the following statements circling the appropriate symbol as well.

- a)  $\angle F \stackrel{=}{\cong} \angle \underline{\hspace{1cm}}$       b)  $NP \stackrel{=}{\cong} \underline{\hspace{1cm}}$       c)  $m\angle M \stackrel{=}{\cong} \angle \underline{\hspace{1cm}}$       d)  $\overline{FD} \stackrel{=}{\cong} \underline{\hspace{1cm}}$

28. Given:  $\overline{GE}$  bisects  $\angle DGF$  and  $\angle DEF$

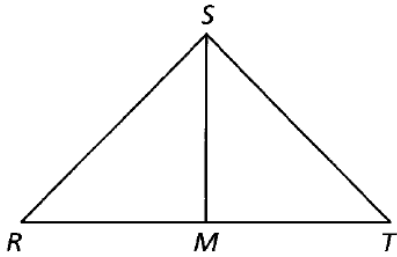


CONGRUENT    NOT CONGRUENT

Shortcut: \_\_\_\_\_  $\triangle DGE \cong$  \_\_\_\_\_

Additional Reason(s): \_\_\_\_\_

29. Given: M is the midpoint of  $\overline{RT}$  and  $\triangle SRT$  is isosceles with base  $\overline{RT}$

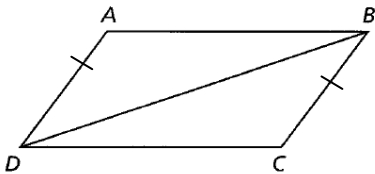


CONGRUENT    NOT CONGRUENT

Shortcut: \_\_\_\_\_  $\triangle MRS \cong$  \_\_\_\_\_

Additional Reason(s): \_\_\_\_\_

30.



CONGRUENT    NOT CONGRUENT

Shortcut: \_\_\_\_\_  $\triangle ABD \cong$  \_\_\_\_\_

Additional Reason(s): \_\_\_\_\_

31. Suppose that  $\triangle XYZ \cong \triangle VZY$ .

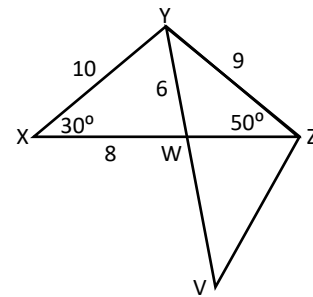
a.  $m\angle V =$  \_\_\_\_\_

d.  $m\angle XYW =$  \_\_\_\_\_

b.  $m\angle VYZ =$  \_\_\_\_\_

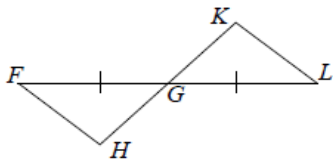
e.  $VZ =$  \_\_\_\_\_

c.  $VY =$  \_\_\_\_\_



32.

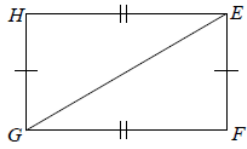
CONGRUENT    NOT CONGRUENT



Shortcut: \_\_\_\_\_  $\triangle FGH \cong$  \_\_\_\_\_

Additional Reason(s): \_\_\_\_\_

33.



CONGRUENT NOT CONGRUENT

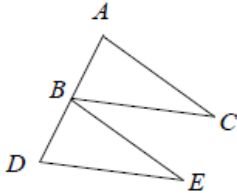
Shortcut: \_\_\_\_\_

$\triangle EGH \cong$  \_\_\_\_\_

Additional Reason(s): \_\_\_\_\_

34. Given: B is the midpoint of  $\overline{AD}$ ,  $\angle C \cong \angle E$ ,  $\angle A \cong \angle DBE$

CONGRUENT NOT CONGRUENT



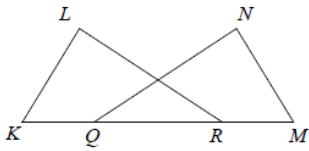
Shortcut: \_\_\_\_\_

$\triangle ABC \cong$  \_\_\_\_\_

Additional Reason(s): \_\_\_\_\_

35. Given:  $\angle MQN \cong \angle KRL$ ,  $\angle N \cong \angle L$ ,  $\overline{KQ} \cong \overline{MR}$

CONGRUENT NOT CONGRUENT



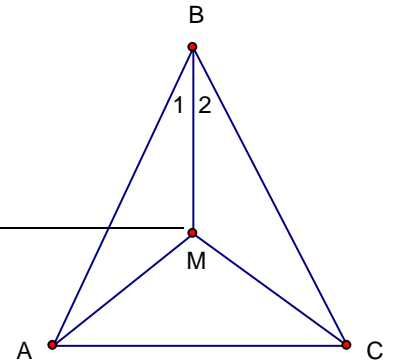
Shortcut: \_\_\_\_\_

$\triangle KLR \cong$  \_\_\_\_\_

Additional Reason(s): \_\_\_\_\_

36. Given:  $\overline{AB} \cong \overline{CB}$ ;  $\overline{BM}$  bisects  $\angle ABC$

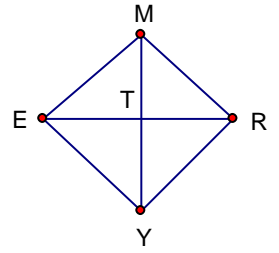
Prove:  $\triangle AMB \cong \triangle CMB$



Statements	Reasons
1. $\overline{AB} \cong \overline{CB}$	1.
2.	2. Given
3.	3.
4.	4.
5. $\triangle$ _____ $\cong$ $\triangle$ _____	5.

37. Given: T is the midpoint of  $\overline{ER}$ ;  $\overline{ME} \cong \overline{MR}$

Prove:  $\triangle MTE \cong \triangle MTR$



Statements	Reasons

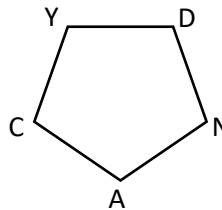
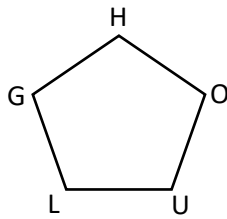
38. Given  $GHOUL \cong CANDY$ , fill in the statements below.

a)  $\overline{OH} \cong$  \_\_\_\_\_

b)  $\overline{YC} \cong$  \_\_\_\_\_

c)  $\angle U \cong \angle$  \_\_\_\_\_

d)  $\angle A \cong \angle$  \_\_\_\_\_

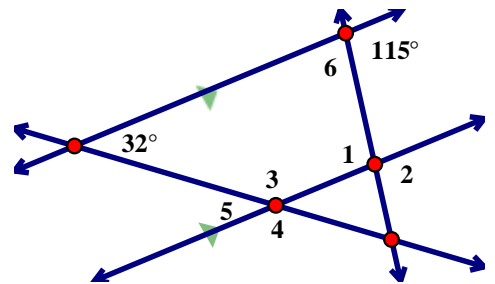


39. Solve the following.

a)  $m\angle 1 =$  \_\_\_\_\_

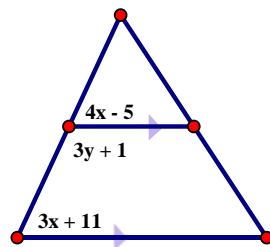
b)  $m\angle 2 =$  \_\_\_\_\_

c)  $m\angle 3 =$  \_\_\_\_\_

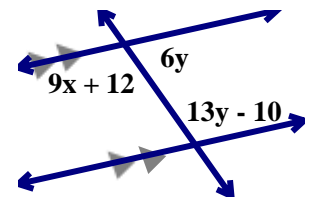


40. Solve the following.

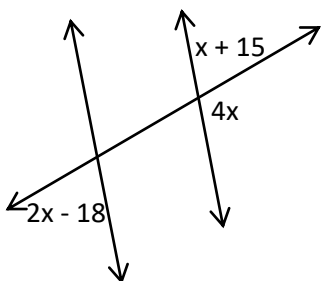
a)



b)

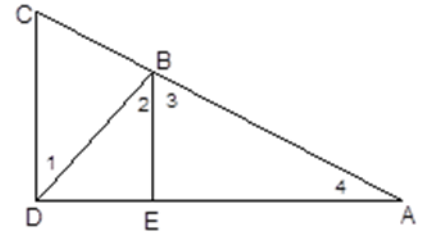


41. Are the lines parallel? Show mathematical evidence to support your response.



42. Given:  $\overline{CD} \parallel \overline{BE}$ ;  $\angle 1 \cong \angle 3$

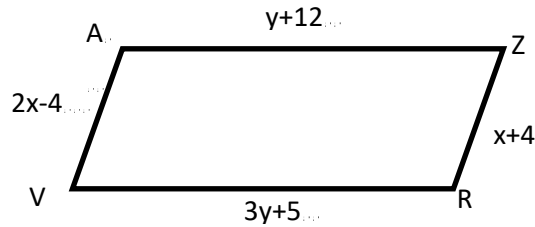
Prove:  $\overline{BE}$  bisects  $\angle ABD$



Statements	Reasons

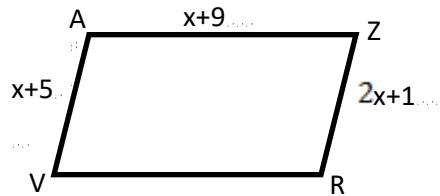
43. Given: VRZA is a parallelogram

Find the perimeter.



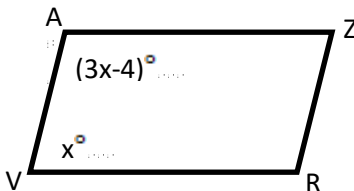
44. Given: VRZA is a parallelogram

Find VR.



45. Given: VRZA is a parallelogram:  $\angle V = x^\circ$ ,  $\angle A = (3x - 4)^\circ$

Find:  $m\angle A$  and  $m\angle Z$



46. a) Find the slope of the line through the points A( 3,6) and B (4, -7).

b) Find the slope of a line parallel to this line.

c) Find the slope of a line perpendicular to this line.

d) Find the distance between these points.

e) Find the midpoint of this segment.

47. Write the equation for a line parallel to  $3x + 4y = 12$  and goes through the point  $(-8, 1)$ .

48. Write the equation of a line perpendicular to  $3x + 4y = 12$  and goes through  $(-3, -2)$ .

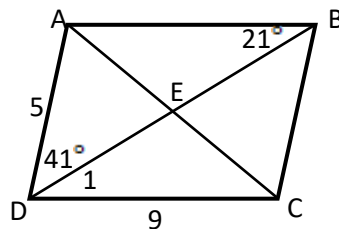
49. ABCD is a parallelogram.  $AC = 8$ ;  $DE = 6$

a.  $m\angle 1 =$  \_\_\_\_\_

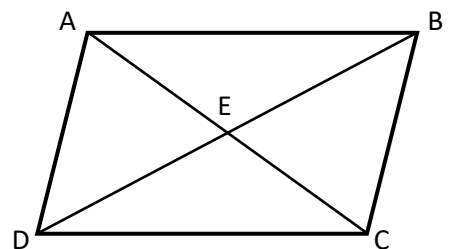
c.  $m\angle ABC =$  \_\_\_\_\_

b.  $AB =$  \_\_\_\_\_

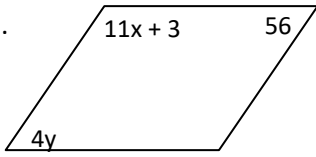
d.  $DB =$  \_\_\_\_\_



50. ABCD is a parallelogram.  $AE = 4x - 3y$ ;  $EC = 13$ ;  $DE = 2x + y$ ;  $BE = 19$   
Find x and y.



51.



Given the shape is a rhombus. Find the value for  $x$  and  $y$ .

52. Given the shape below is a rectangle, find the value for  $x$ .

