

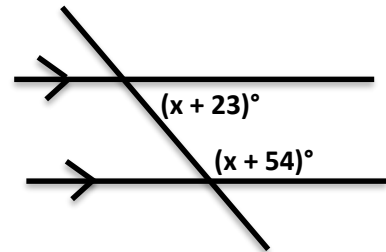
1. Find the coordinates of the midpoint of  $\overline{WX}$  with endpoints  $W(-4,1)$  and  $X(2,9)$ .

2. Find the coordinates of Y if the midpoint of YZ is  $(1.5, 2)$  and Z is  $(-1, -4)$ .

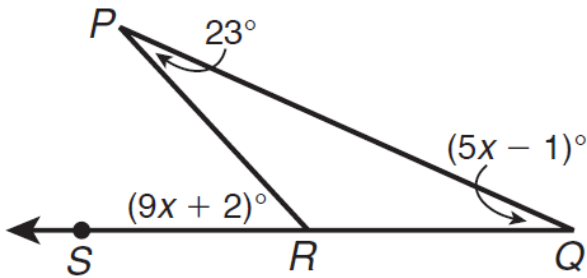
3. The coordinates of the vertices of a quadrilateral DEFG are  $(3, 0)$ ,  $(2, 3)$ ,  $(-3, 2)$  and  $(-2, -1)$ . What are the coordinates after the following transformations:

- A. Rotation  $180^\circ$
- B. Reflection across the y-axis
- C. Translation 5 units right and 2 units down.

4. State the angle relationship. Then find the value of each labeled angle.



5. Find  $m\angle PQR$ ,  $m\angle PRS$  and  $m\angle PRQ$ .



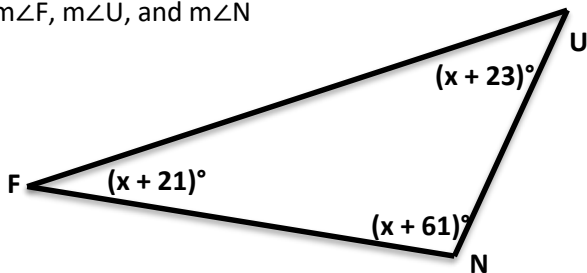
6. Given:  $\triangle GHI \cong \triangle JKL$ . Identify the congruent corresponding parts. Then draw a diagram and label with the given information

$GH \cong$  \_\_\_\_\_

$JL \cong$  \_\_\_\_\_

$\angle K \cong$  \_\_\_\_\_

7. Given  $\triangle FUN$ . Write an equation, solve for x, then find  $m\angle F$ ,  $m\angle U$ , and  $m\angle N$

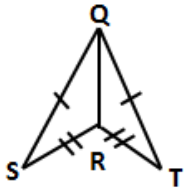


8. Bisect the segment below. Mark the congruent segments.

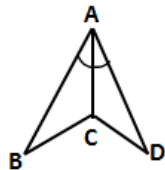


9. Determine if the triangles are congruent. Write a  $\cong$  statement and justify your answer with a shortcut.

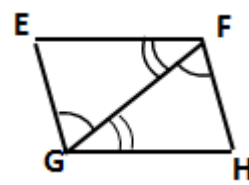
A.  $\triangle QRS \cong$  \_\_\_\_\_



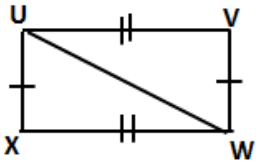
B.  $\triangle ACB \cong$  \_\_\_\_\_



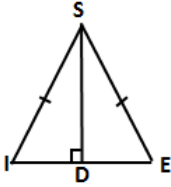
C.  $\triangle EFG \cong$  \_\_\_\_\_



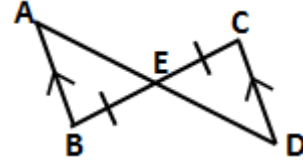
D.  $\triangle UVW \cong$  \_\_\_\_\_



E.  $\triangle SDE \cong$  \_\_\_\_\_



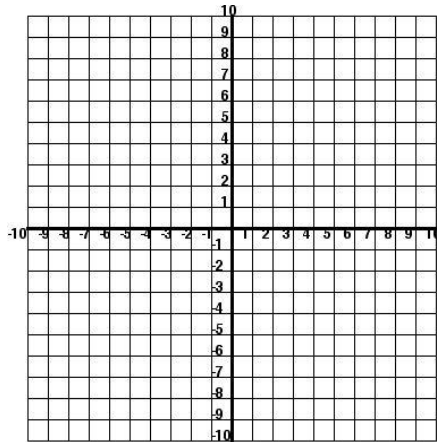
F.  $\triangle ABE \cong$  \_\_\_\_\_



10. Use slopes to determine whether the lines are parallel, perpendicular or neither.

$\overline{AB}$  and  $\overline{CD}$  for  $A(4,7), B(3,2), C(-3,4), D(2,3)$

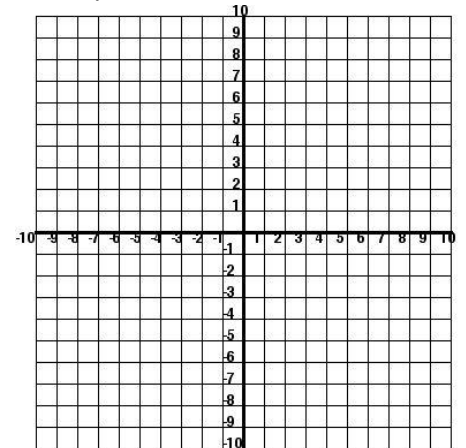
Graph AB and CD to confirm your answer.



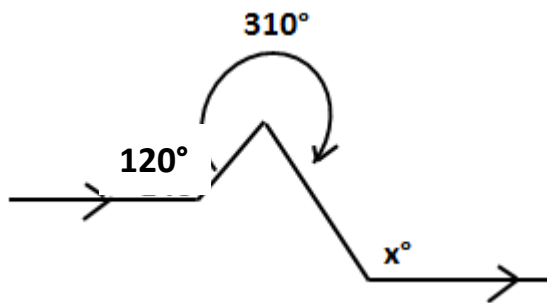
11. Use slopes to determine whether the lines are parallel, perpendicular or neither.

$\overline{EF}$  and  $\overline{GH}$  for  $E(-2,4), F(3,1), G(-1,-2), H(4,-5)$

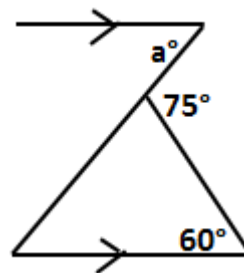
Graph EF and GH to confirm your answer.



12. Find the measure of  $x$ .



13. Find the measure of  $a$ .

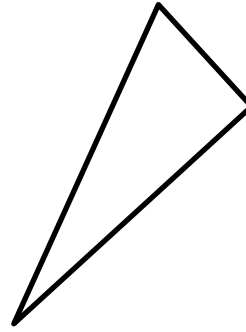


14. Write an the equation of the line  
 $\overrightarrow{JK}$  given  $J(3, -4), K(4, -2)$

Write the equation of the line that parallel to JK and passes through  $(-3, -2)$ .

Write the equation of the line that is perpendicular to JK and passes through  $(6, 4)$ .

15. Rotate the triangle  $-85^\circ$  about the given point.



16. Construct an isosceles triangle with two sides that are 7 cm. Label any congruent parts.

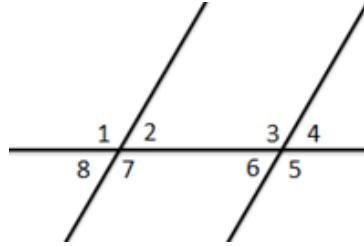
17. Draw and label  $\angle MIA = 120^\circ$ . Bisect the angle using a compass.

18. Write the equation for the circle given the endpoints of the diameter are  $(-5, 8)$  and  $(9, -6)$ .

19. Directed line segment QR has endpoints  $Q(-10, 2)$  and  $R(10, -8)$ . Determine the point that partitions the directed line segment in a ratio of 2:3.

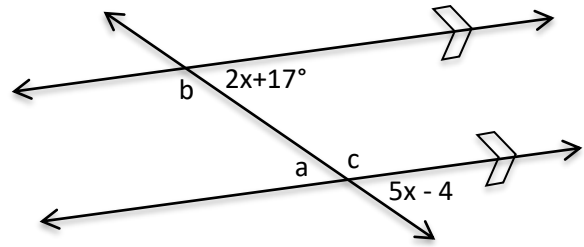
20. Name the type of pair and the relationship between them

- $\angle 8$  and  $\angle 2$  \_\_\_\_\_
- $\angle 1$  and  $\angle 5$  \_\_\_\_\_
- $\angle 7$  and  $\angle 6$  \_\_\_\_\_
- $\angle 4$  and  $\angle 5$  \_\_\_\_\_
- $\angle 2$  and  $\angle 6$  \_\_\_\_\_
- $\angle 8$  and  $\angle 6$  \_\_\_\_\_



21. Find the unknown measures

$x =$  \_\_\_\_\_  
 $m\angle a =$  \_\_\_\_\_  
 $m\angle b =$  \_\_\_\_\_  
 $m\angle c =$  \_\_\_\_\_



22. Determine the slope of each linear equation and find the slope of the line parallel to that line and the slope of the line perpendicular to that line.

A.  $4y + 3x = 8$

Slope:  
 || slope:  
 $\perp$  slope:

B.  $y = 2$

Slope:  
 || slope:  
 $\perp$  slope:

C.  $x = -1$

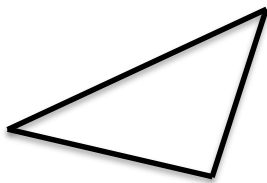
Slope:  
 || slope:  
 $\perp$  slope:

D.  $y = 2x - 3$

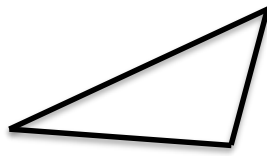
Slope:  
 || slope:  
 $\perp$  slope:

23. Draw a larger triangle for each of the following. Use a compass and protractor to construct the 3 lines needed for each point of concurrency in the triangles below. The figure should show the appropriate congruence marks or angle measures to indicate the lines meet at the correct point.

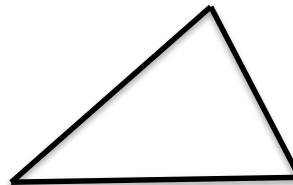
A. Incenter



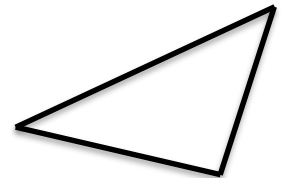
B. Circumcenter



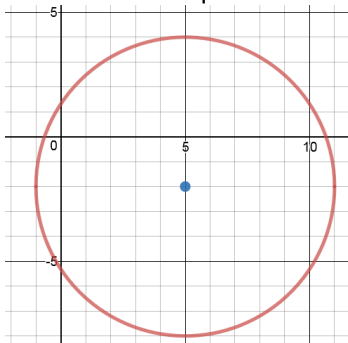
C. Orthocenter



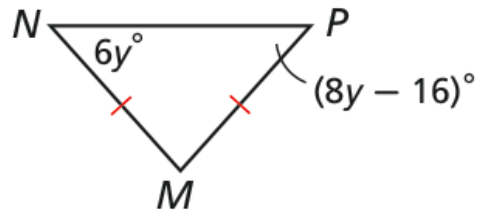
D. Centroid



24. Write the equation of the circle.



25. Find  $m\angle M$



26. Given  $\triangle DEF \cong \triangle LMN$ , find the length of EF and  $m\angle L$ .

