

Geometry

FIRST SEMESTER REVIEW

Name_____

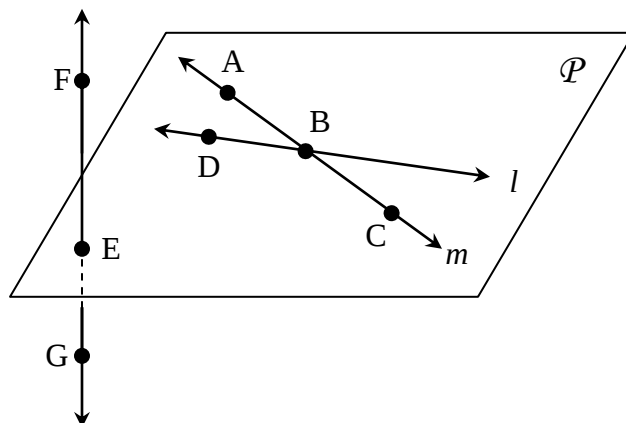
Per._____Date_____

1. Is the statement: *If two lines intersect, then their intersection is a point*, always, sometimes, or never true?

For questions 2-3, use the figure given at the right.

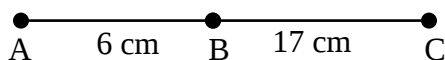
2. Which is another name for plane ABD?

3. Name the intersection of plane $\mathcal{P}$ and $\overleftrightarrow{FG}$?



4. If $\angle 1$ and $\angle 2$ are supplementary angles, and $m\angle 1 = 5x - 18$, and $m\angle 2 = 4x + 9$, find the measure of the two angles.

5. Find the length of $\overline{AC}$.



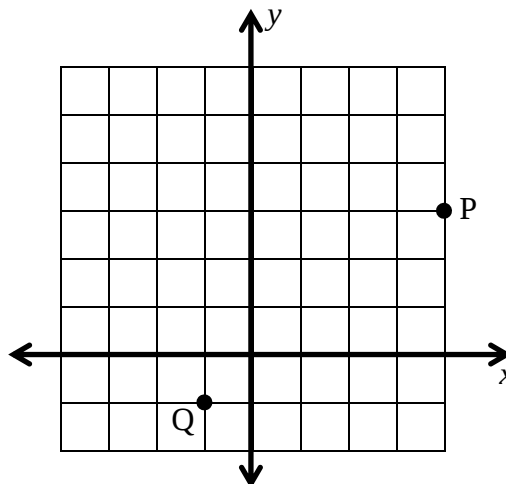
6. What property that justifies the following statement:
If $x = 2$ then $2 = x$.

7. What property that justifies the following statement:
If $\overline{GH} \cong \overline{FD}$ and $\overline{FD} \cong \overline{JK}$ then $\overline{GH} \cong \overline{JK}$

For questions 8-9 use the figure given at the right.

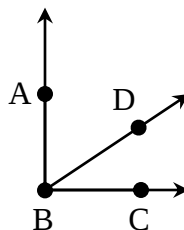
8. Find the distance between points P and Q.

9. Find the coordinates of the midpoint of $\overline{PQ}$.

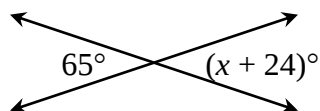


10. If Q, R, and S are collinear and $QS + SR = QR$, which point is between the other two?

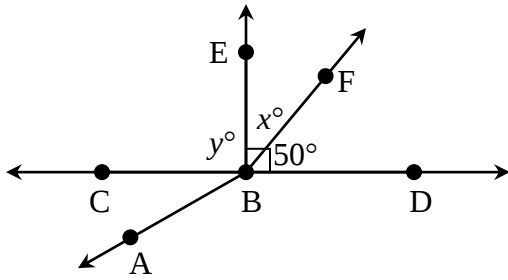
11. If $m\angle ABD = 43$ and $m\angle DBC = 32$ find $m\angle ABC$.



12. Find x .

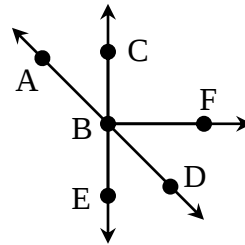


13. Use the figure below to determine the values of x and y .

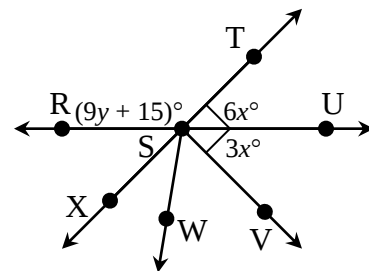


14. For what value of x is $\angle ATK \cong \angle MJS$ if $m\angle ATK = 2x + 24$ and $m\angle MJS = 4x - 10$?

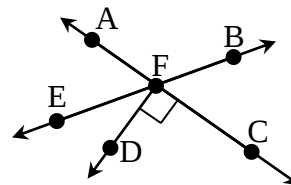
15. Find $m\angle ABC$ if $m\angle ABC = 4x + 9$ and $m\angle EBD = 7x - 9$.



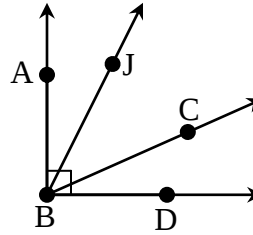
16. Find x and y .



17. If $m\angle EFD = 4x - 10$ and $m\angle BFC = 5x - 20$, find x .



18. If $m\angle CBJ = 32$, $\angle ABJ \cong \angle DBC$, find $m\angle DBC$.



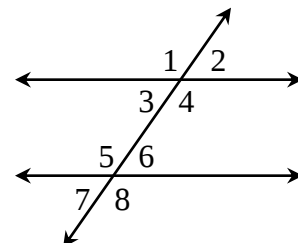
19. Identify the conclusion of the statement: *If $x + 4 = 5$, then $x = 1$.*

20. State the inverse of the statement: *If it is cloudy, then it is raining.*

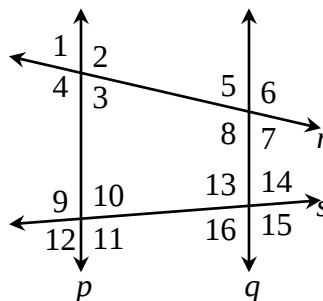
21. Determine the slope of the line the contains the points $P(-2, -4)$ and $Q(-8, 10)$

22. Determine the slope of the line $\perp$ to the line with points $P(-8, 10)$ and $Q(0, 9)$

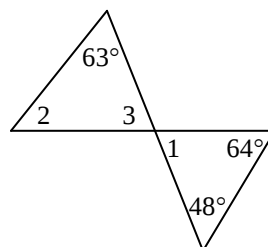
23. Given $a \parallel b$ and $m\angle 3 = 5x + 10$ and $m\angle 7 = 3x + 28$, find x .



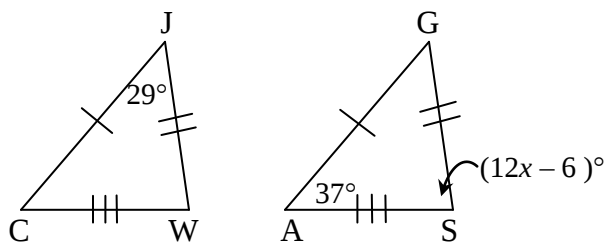
24. If $m\angle 9 = 7x - 20$ and $m\angle 15 = 3x + 36$, find x so that $p \parallel q$



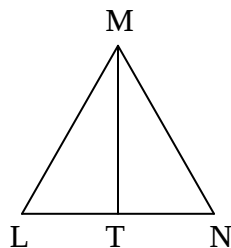
25. What is $m\angle 2$?



26. If $\triangle CJW \cong \triangle AGS$, $m\angle A = 37$, $m\angle J = 29$, and $m\angle S = 12x - 6$, find x .



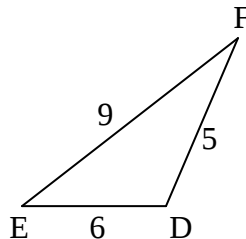
27. If $\triangle MLT \cong \triangle MNT$, $\overline{TN} \cong ?$



28. $\triangle ABC$ is an isosceles triangle with vertex angle B. If $AB = 5x - 28$, $AC = 2x + 5$, and $BC = 2x + 8$, find the length of the base of the triangle.

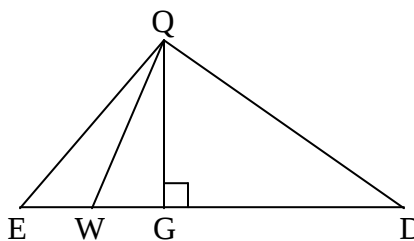
29. If $\triangle DJL \cong \triangle EGS$, which angle in $\triangle EGS$ corresponds to $\angle J$?

30. Name the angle with the smallest measure in $\triangle DEF$.



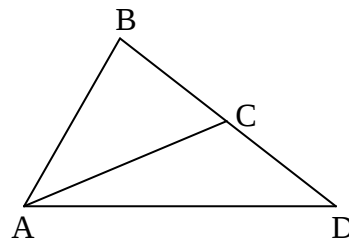
31. Can 1, 1, 1 be lengths of the sides of a triangle?

32. Find the shortest distance from Q to $\overline{ED}$.



For questions 33-35, use the figure at the right to answer the following questions.

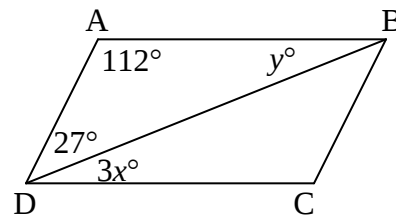
33. If $\overline{AC}$ is a median, name 2 $\cong$ segments



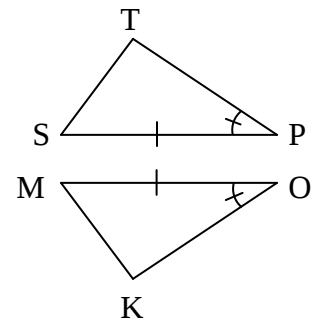
34. If $\overline{AC}$ is an angle bisector, name 2 $\cong$ angles.

35. $\overline{AC}$ is an altitude, name segments that are $\perp$.

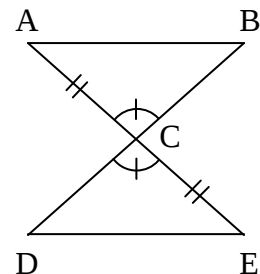
36. $\overline{BD}$ bisects $\angle ADC$, find x and y .



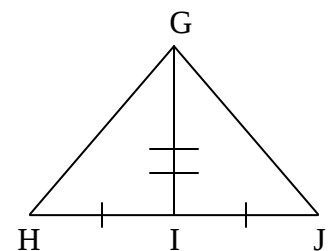
37. Name the additional $\cong$ parts needed so that $\triangle STP \cong \triangle MKO$ by SAS.



38. Name the additional $\cong$ parts needed so that $\triangle ABC \cong \triangle EDC$ by ASA.

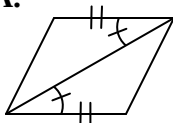


39. Name the additional $\cong$ parts needed so that $\triangle GHI \cong \triangle GJI$ by SSS.

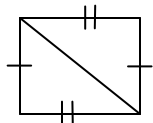


40. Determine which pair of triangles *cannot* be proven congruent.

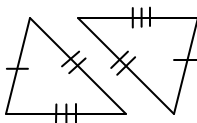
A.



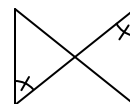
B.



C.



D.

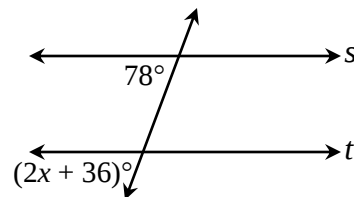


41. Which statement is true?

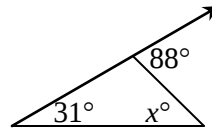
- A. Supplementary angles are $\cong$.
- B. A right angle has no supplement.
- C. The supplement to an acute angle is obtuse.
- D. An obtuse angle is the supplement of an obtuse angle.

42. If the measurement of three angles of a triangle are $5x + 15$, $7x - 20$, and $3x - 10$, determine what type of triangle you have.

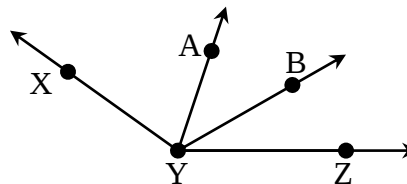
43. Find the value of x so that $s \parallel t$.



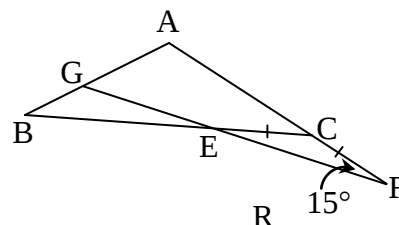
44. Find the value of x .



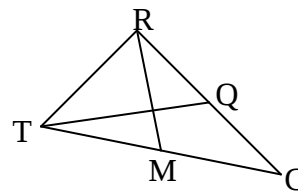
45. If $\overrightarrow{YA}$ bisects $\angle XYZ$, $m\angle XYZ = 140$, and $m\angle BYZ = 25$, find $m\angle BYA$.



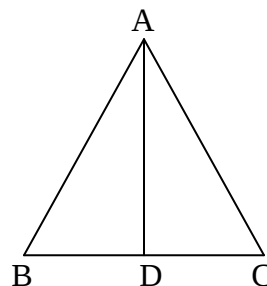
46. In the figure at the right, $\overline{AB} \cong \overline{AC}$, $\overline{CE} \cong \overline{CF}$, and $m\angle F = 15$. Find $m\angle ABC$.



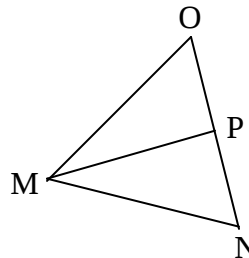
47. In the figure at the right, $\overline{TQ}$ and $\overline{RM}$ are medians in $\triangle CRT$. If $MC = 6x$, $TM = 2x + 20$, and $CQ = 7x + 2$, find QR .



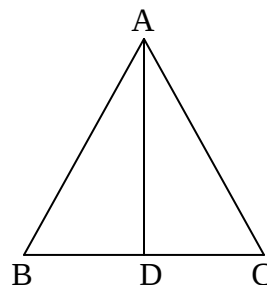
48. In the figure at the right, $\overline{AD}$ is a median, $m\angle BAD = 5x + 2$, $m\angle CAD = 2x + 23$, $m\angle BDA = 7x + 6$, $BD = x + 2$, and $DC = 3x + 4$, find x .



49. In the figure at right, $\overline{MP}$ is an $\angle$ bisector of $\triangle MNO$, $m\angle NMP = 6x - 3$ and $m\angle OMP = 2x + 21$, find x .



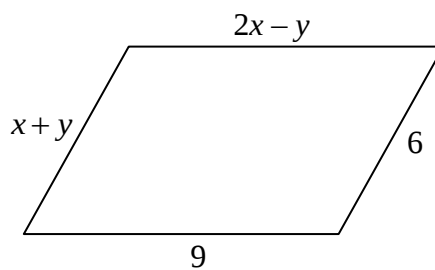
50. In the figure at the right, $\overline{AD}$ is an $\angle$ bisector, $m\angle BAD = 5x + 2$, $m\angle CAD = 2x + 23$, $m\angle BDA = 7x + 6$, $BD = x + 2$, and $DC = 3x + 4$, find x .



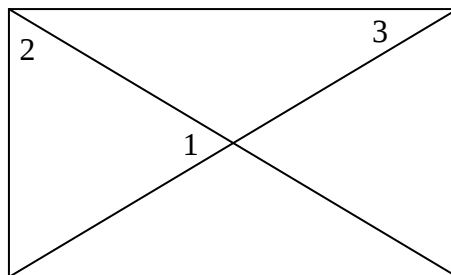
51. Find the sum of the interior $\angle$'s of a 25-gon.

52. If the measure of an interior angle of a regular polygon is 175° , find the number of sides.

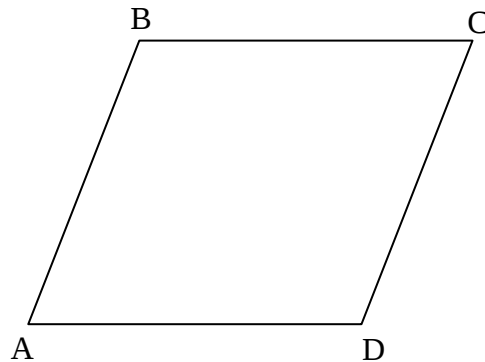
53. In the parallelogram below find x and y .



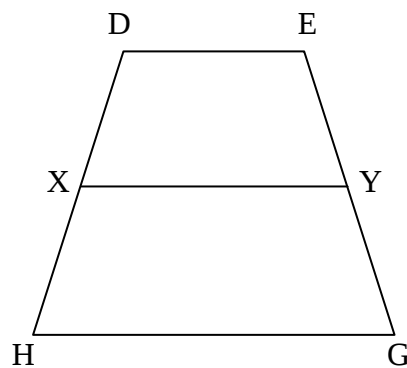
54. In the rectangle below, if $m\angle 1 = 55^\circ$, find $m\angle 2$ and $m\angle 3$.



55. In rhombus ABCD, $AB = 4x + 5$ and $BC = 2x + 13$ find x .



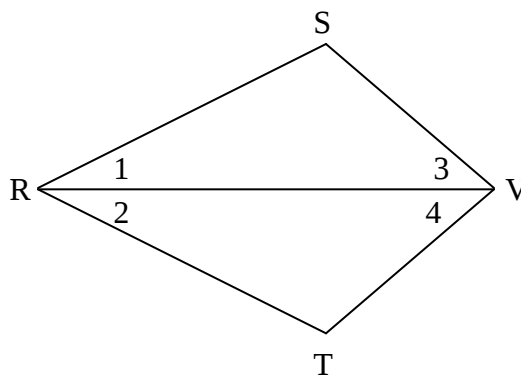
56. In trap. DEGH with median $\overline{XY}$. If $HG = 32$ and $XY = 20$, find DE.



Write a 2-column proof.

57. **Given:** $\overline{RV}$ bisects $\angle SRT$;
 $\overline{RV}$ bisects $\angle SVT$

Prove: $\triangle SVR \cong \triangle TVR$



58. **Given:** $m\angle K = m\angle O$; M is the midpoint of $\overline{NL}$
Prove: $\triangle KLM \cong \triangle ONM$

