

1. The coordinate of A is $2x - 5$ and the coordinate of B is $x + 8$. If $AB = 30$, find the possible values of A.

2. B lies on the interior of $\angle ADC$. $m\angle ADC = 64$. $m\angle ADB = 5x - 3$ and $m\angle BDC = x + 25$. Find x . Is \overrightarrow{DB} an angle bisector?

3. Fill in the blank.

- Supplementary angles sum to _____
- Complementary angles sum to _____
- Vertical angles are _____
- Two angles that are supplementary to the same angle are _____

4. State a formula for each.

- Slope:
- Distance:
- Midpoint:
- Slope – intercept form of a line:
- Point – slope form of a line:

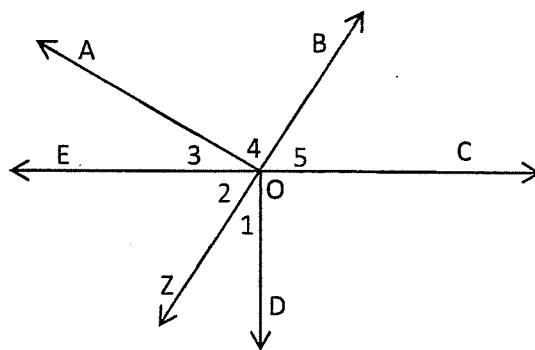
5. In the diagram, \overline{OB} bisects $\angle AOC$ and $\overline{EC} \perp \overline{OD}$. Find the value of x .

a. $m\angle 5 = 2x, m\angle 3 = x$

b. $m\angle 1 = 2x, m\angle 2 = 6x + 2$

c. $m\angle 2 = 6x + 9, m\angle 5 = 2x + 49$

d. $m\angle 1 = x - 8, m\angle 2 = 2x + 5, m\angle 4 = 3x - 26$



6. Fill in the blank.

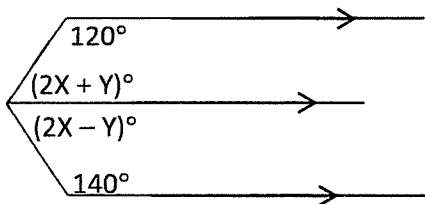
parallel
If two lines are cut by a transversal then ...

a. Alternate interior angles are _____

b. Corresponding angles are _____

c. Same-side interior angles are _____

7. Find the value of x and y .



8. In $\triangle ABC$, $A(2,1)$, $B(3,-5)$ and $C(-3,0)$

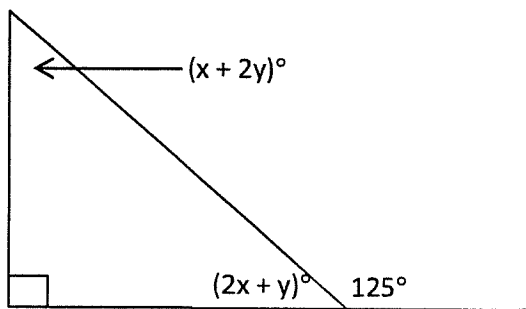
a. Classify the triangle by its sides.

b. Classify the triangle by its angles.

c. Write the equation of the altitude drawn from A.

d. Write the equation of the median drawn from B.

9. Find the value of x and y .

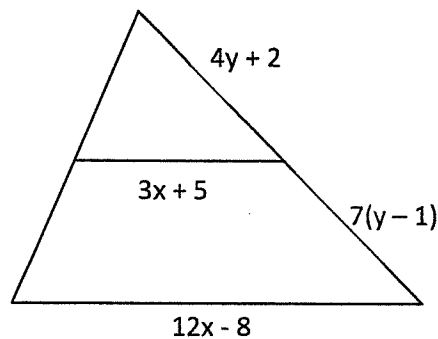


10. The angle sum of a polygon is 4140. How many sides does the polygon have?

11. Complete each statement with sometimes, always or never.

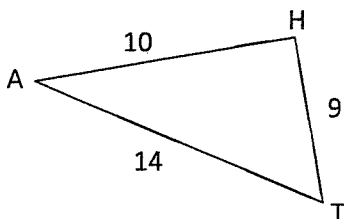
- a. A square is _____ a rectangle.
- b. A rectangle is _____ a rhombus.
- c. A rhombus is _____ a square.
- d. A trapezoid _____ has three congruent sides.
- e. The diagonals of a rectangle are _____ congruent.
- f. The diagonals of a parallelogram _____ bisect each other.
- g. The diagonals of a parallelogram are _____ perpendicular.

12. A segment joins the midpoints of two sides of a triangle. Find the value of x and y .



13. The lengths of two sides of a triangle are 20 and 52. Find the possible values for the 3rd side.

14. List the angles in the triangle in order from smallest to largest.



15. Find the point of concurrency of the altitudes of $\triangle ABC$ with vertices that have coordinates $A(-2, 6)$, $B(-8, -4)$, and $C(6, 2)$.



16. Find the point of concurrency of the medians of $\triangle ABC$ with vertices that have coordinates $A(4, 6)$, $B(6, 2)$, and $C(-2, -4)$.



17. John flew a kite over his school from his house. If he let out 800 meters of string and the kite was flying at an angle of elevation of 35° approximately how far away is his school?

18. An observer on a cliff 1000 meters above sea level sights two ships due east. The angles of depression to the ships are 47° and 32° . Find, to the nearest meter, the distance between the ships.



