

Name _____ Date _____ Period _____

Geometry
Points of Concurrency Homework

Describe how each of the points of concurrency is found. Be specific!

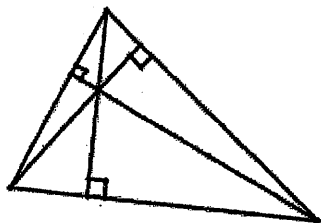
Centroid _____

Incenter _____

Circumcenter _____

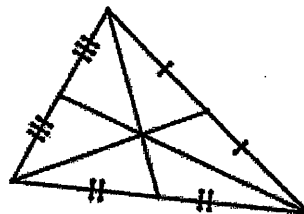
Orthocenter _____

Each figure below, tell what point of concurrency is shown and what constructions form that point:



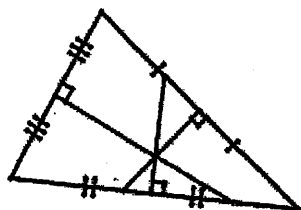
Point: _____

Formed by: _____



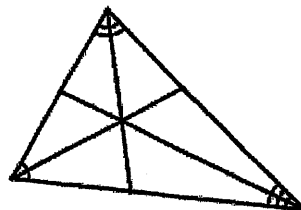
Point: _____

Formed by: _____



Point: _____

Formed by: _____

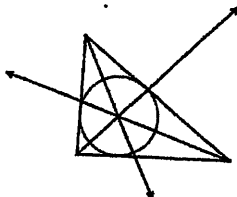


Point: _____

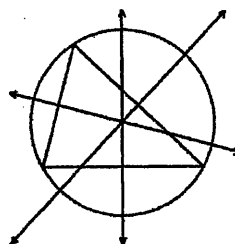
Formed by: _____

Important Questions (use your graphic organizer to help):

1. Which points of concurrency are always inside the triangle? _____
2. Which point of concurrency is always on the vertex of a right triangle? _____
3. Which point of concurrency is always on the midpoint of the hypotenuse in a right triangle? _____
4. Which points of concurrency are always outside of an obtuse triangle? _____
5. Which point of concurrency is the center of gravity in a triangle? _____
6. Which point of concurrency is equidistant from every vertex? _____
7. Which point of concurrency is the center of an inscribed circle as shown below? _____

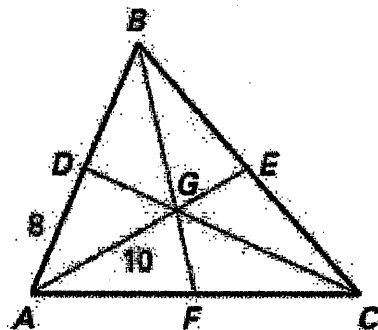


8. Which point of concurrency is the center of a circumscribed circle as shown below? _____



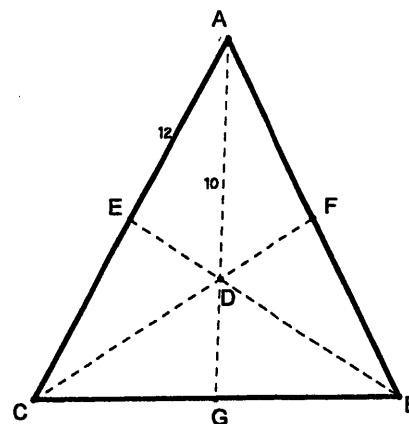
Point G is the Centroid of $\triangle ABC$. $AD = 8$, $AG = 10$, and $CD = 18$. Find the length of the given segment.

9. BD _____
10. AB _____
11. EG _____
12. AE _____
13. CG _____
14. DG _____

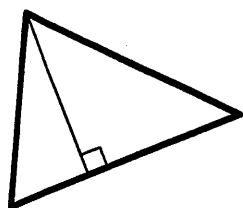


D is the centroid of $\triangle ABC$, $AE = 12$, $AD = 10$, $CF = 12$. Find the length of each segment.

15. DG _____
16. AG _____
17. EC _____
18. AC _____
19. DF _____
20. CD _____

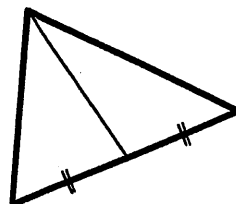


Circle the letter with the name of the segment/line/ray shown.



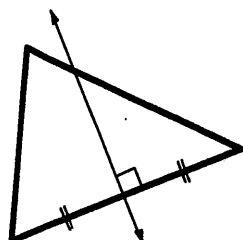
- (a) perpendicular bisector
(b) angle bisector
(c) median
(d) altitude

2.



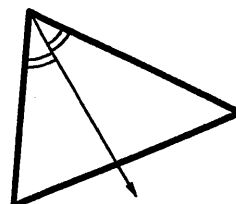
- (a) perpendicular bisector
(b) angle bisector
(c) median
(d) altitude

3.



- (a) perpendicular bisector
(b) angle bisector
(c) median
(d) altitude

4.



- (a) perpendicular bisector
(b) angle bisector
(c) median
(d) altitude

Circle the letter with the name of the correct point of concurrency.

5. The three altitudes of a triangle intersect at the _____.

- (a) circumcenter (b) incenter (c) centroid (d) orthocenter

6. The three medians of a triangle intersect at the _____.

- (a) circumcenter (b) incenter (c) centroid (d) orthocenter

7. The three perpendicular bisectors of a triangle intersect at the _____.

- (a) circumcenter (b) incenter (c) centroid (d) orthocenter

8. The three angle bisectors of a triangle intersect at the _____.

- (a) circumcenter (b) incenter (c) centroid (d) orthocenter

9. It is equidistant from the three vertices of the triangle.

- (a) circumcenter (b) incenter (c) centroid (d) orthocenter

10. It is equidistant from the three sides of the triangle.

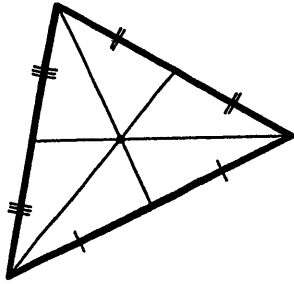
- (a) circumcenter (b) incenter (c) centroid (d) orthocenter

11. It divides each median into two sections at a 2:1 ratio.

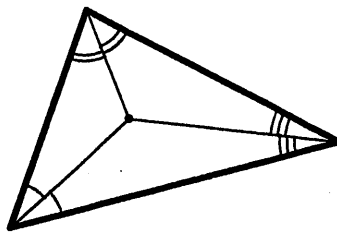
- (a) circumcenter (b) incenter (c) centroid (d) orthocenter

Name the point of concurrency shown.

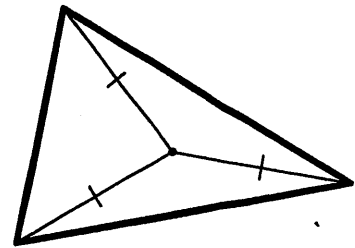
12.



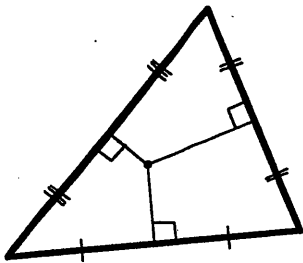
13.



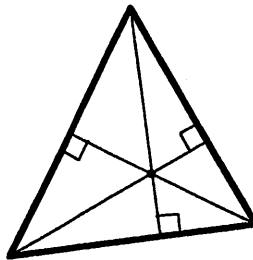
14.



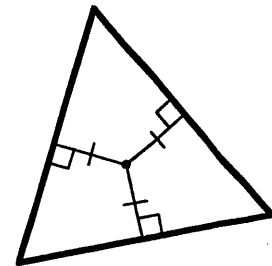
15.



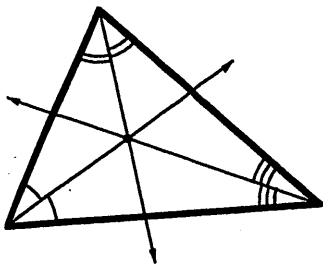
16.



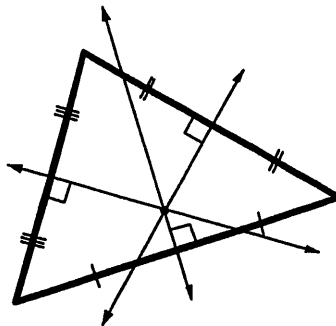
17.



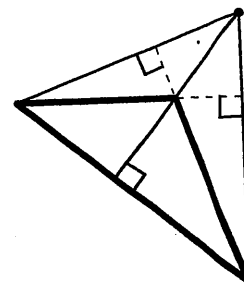
18.



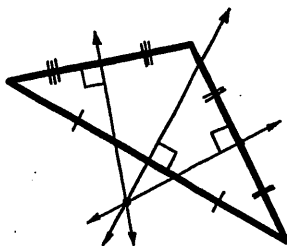
19.



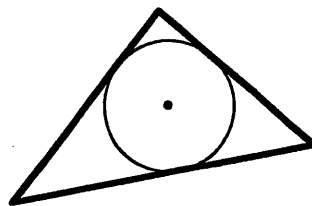
20.



21.



22.



23.

