Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2B-5 Special Segments and Points of Concurrency Date\_\_\_\_\_\_\_\_\_\_\_\_\_

**I. Name the special segment**

|  |  |  |  |
| --- | --- | --- | --- |
| Image result for angle bisector1.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 2.  Image result for medians  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 3.  Image result for altitude of a triangle  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Image result for perpendicular bisector 4.  \_\_\_\_\_\_\_\_\_\_\_\_\_­­­­­­­­­­­\_\_\_\_\_\_­­­­­­­­\_\_\_ |

**II. Name the point of concurrency**

|  |  |  |  |
| --- | --- | --- | --- |
| 5.  Image result for incenter  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 6.  Related image  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 7.  Image result for orthocenter of a triangle    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Image result for medians 8.    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. **Write the special segment name or the point of concurrency name that fits**

**the description below. Write your answer in the space provided.**

9.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. This segment connects a vertex and the opposite side, at a right angle.

10. This point is the intersection of the angle bisectors.

11. This segment connects a vertex and the opposite side, and splits the angle

into 2 congruent angles.

12. This point is the intersection of the three medians of a triangle.

13. This point is equidistant from the vertices of the triangle.

14. This point is equidistant from the sides of the triangle.

15. This segment connects a vertex and the opposite side at its midpoint.

16. This segment does not always go through the vertex, but does form a right angle

with the opposite side of the triangle, as well as splitting the side into 2 congruent parts.

1.  **Use the picture to the right to answer the following questions.**

**, , and** **are angle bisectors.**

17. ****=34˚**, **GHJ=\_\_\_\_\_\_\_\_\_\_\_\_.

18. HJT=41˚. TJS=\_\_\_\_\_\_\_\_\_\_\_\_\_.

19. =78˚. JGR=\_\_\_\_\_\_\_\_\_\_\_\_.

1.  **Use the picture to the right to answer the following questions.**

**,, and  are medians.**

20. =12, =\_\_\_\_\_\_\_\_\_ 21. =3, =\_\_\_\_\_\_\_\_\_

22. =14, =\_\_\_\_\_\_\_\_\_ 23. =9, =\_\_\_\_\_\_\_\_\_

24. =11, =\_\_\_\_\_\_\_\_ 25. =24, =\_\_\_\_\_\_\_\_\_

26. =6x+5, =3x+11. Solve for x. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

27. =2x+3, =3x-2. Solve for x. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Use the picture below for problems 9-10. has medians , , and  concurrent at centroid M.**

9. If FM = 18 Find ZM

10. If DY = 4, find DF.

**VII.**

18. The Incenter is (**always/sometimes/never)** on the outside of the triangle.

19. The Centroid is (**always/sometimes/never)** on the outside of the triangle.

20. The Circumcenter is (**always/sometimes/never)** on the outside of the triangle.

21. The Orthocenter is (**always/sometimes/never)** on the outside of the triangle.

22. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the center of gravity.

23. What construction would you use to find the circumcenter? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_