

GeoGebra Worksheet II

Name _____

1. Construct a triangle.
2. Construct the midpoints of each of the sides of the triangle.
3. Construct the circle through these three midpoints.
4. What circle have you just constructed? _____
5. Select the circle you have just constructed. Go to the Edit Menu and click on Properties. Change the color of the circle to red.
6. Construct the angle bisectors of each angle of the triangle (use the 2 line version of the angle bisector command, as we will want both the interior and exterior angle bisectors).
7. Construct the point of intersection of two of the internal angle bisectors (there is a command for constructing the intersection of two objects that you should use).
8. What is the point you have just constructed? _____
9. Draw the perpendicular from this point to one of the sides of the triangle.
10. Construct the point of intersection of the perpendicular and the side of the triangle (see step 7).
11. Construct the circle with center you found in step 7 and passing through the point you found in step 10.
12. What is the circle you have just constructed called? _____
13. Construct the intersection of the circle you have just constructed with the circle of step 3.
14. Select a vertex of the triangle and move it around. What do you think is the relationship between the two circles you have constructed?

15. Construct the point of intersection of two of the external angle bisectors.
16. What is this point called? _____
17. Using this point as center, you wish to construct the circle which is tangent to the original triangle. What do you need to construct in order to construct this circle?

18. Construct the circle of step 17.
19. What is this circle called? _____
20. Construct the intersection of this circle with the circle of step 3.
21. Select a vertex of the triangle and move it around. What do you think is the relationship between these two circles?

22. Combining your observations in steps 14 and 21, and assuming that they are in fact true, state an appropriate theorem.

