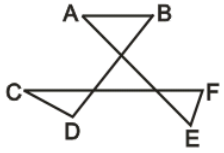
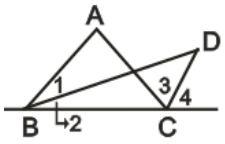
First name: _____ Last name: _____ Student ID: _____

Geometry 1 Homework

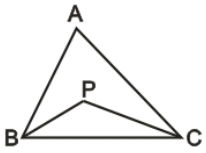
1. $\angle A+\angle B+\angle C+\angle D+\angle E+\angle F=?$



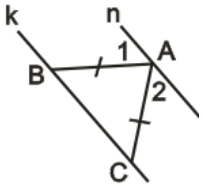
2. $\angle 1 = \angle 2$, $\angle 3 = \angle 4$, and $\angle A = 84°$. Find the measure of $\angle BDC$.



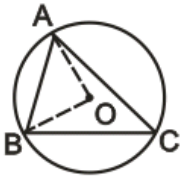
3. $\overline{BP}$ and $\overline{CP}$ are angle bisectors. If $\angle A = 76°$, find the measure of $\angle BPC$.



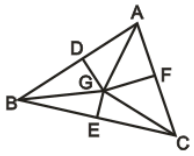
4. If $k \parallel n$, ΔABC is an isosceles, $\angle 1 = 4x°$ and $\angle 2 = (90 - x)°$, find the measure of $\angle BAC$.



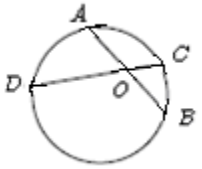
5. If O is the circumcenter of ΔABC and $\angle C = 39°$, find $\angle AOB$.



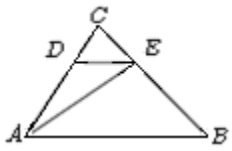
6. The perpendicular bisectors of ΔABC meet at point G. If $\overline{BC} = 12$, $\overline{AD} = 6$, and $\overline{GE} = 3$, find $\overline{GA}$.



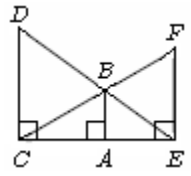
7. If CO = 2, AB = 8, and OA = OB. Find CD.



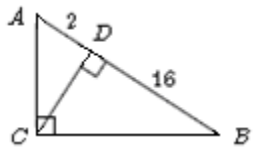
8. Given that $\overline{AB} \parallel \overline{DE}$ and DE : AB = 1 : 3. If the area of triangle CDE is 20, then what is the area of triangle DEA?



9. What is the length of AB, given that CD = 24 and EF = 18?



10. In the right triangle ABC, the altitude from vertex C divides the hypotenuse into two segments, one of length 2 and the other of length 16. Find the perimeter of triangle ABC.



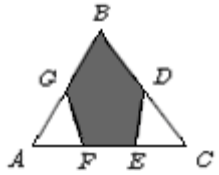
11. What is the maximum number of points of intersection of two different lines and three different circles in the same plane?

12. A 5 inch by 8 inch rectangle is enlarged to a similar rectangle whose smallest side measures 9 inches. What is the length in inches of the diagonal of the enlarged rectangle?

13. A bicycle has a 100 cm diameter wheel. If you ride on and around a circle with a 10 km diameter 12 times, how many revolutions does the wheel make?

14. A circle of radius 10 has its radius reduced by 4. By what percentage has its area been decreased?

15. In $\triangle ABC$, D bisects side BC, G bisects side AB, and the points E and F trisect side AC. What is the area of the shaded polygon, if the area of $\triangle ABC$ is 108?



16. In a triangle ABC, AC = 36, BC = 48, and the medians BD and AE to sides AC and BC, respectively, are perpendicular. Find AB.