Points of Concurrency in the Coordinate Plane – Circumcenter

Name: _______________________________ Date: _____________ Period: ____________

The circumcenter is found from the intersection of the three _____________________________________

1. Draw ΔDIP D(–4, 6), I(2, 6) and P(6, 0). * Write the equation of the line that passes through (–1, 2) and (–1, –7). Graph the line. * Write the equation of the line that passes through (–5, –3) and (1, 1). Graph the line. * Label the circumcenter of ΔDIP as point Q. * What are the coordinates of the circumcenter? * Use a compass to draw the circumscribed circle of ΔDIP.	2. Draw ΔCAN C(–4, 4), A(8, 2) and N(–4, –2). * Write the equation for the ⊥ bisector of segment CN. * Write the equation for the ⊥ bisector of segment AN. * Write the equation for the ⊥ bisector of segment CA. * Graph each ⊥ bisector to show they intersect at the circumcenter of ΔCAN. * What are the coordinates of the circumcenter of ΔCAN? Label this point X. * Use a compass to draw the circumscribed circle of ΔCAN.
3. Write the equation for the 3 lines that intersect to form the circumcenter of ΔRAD: R(–6, 1), A(0, 1), D(0, –3) * Graphically show that these lines meet at the point of concurrency. Label it point Y. * Give the coordinates of the circumcenter. * Use a compass to draw the circumscribed circle of ΔRAD.	4. Write the equation for the 3 lines that intersect to form the circumcenter of ΔTAP: T(1, 1), A(3, 7), P(5, 1) * Graphically show that these lines meet at the point of concurrency. Label it point W. * Give the coordinates of the circumcenter. * Use a compass to draw the circumscribed circle of ΔTAP.
5. Write the equation for the 3 lines that intersect to form the circumcenter of ΔSKY: S(–5, –1), K(1, –5), Y(7, –1) * Graphically show that these lines meet at the point of concurrency. Label it point Z. * Give the coordinates of the circumcenter. * Use a compass to draw the circumscribed circle of ΔSKY.	6. Write the equation for the 3 lines that intersect to form the circumcenter of ΔPIN: P(2, 6), I(6, 2), N(–2, –6) * Graphically show that these lines meet at the point of concurrency. Label it point V. * Give the coordinates of the circumcenter. * Use a compass to draw the circumscribed circle of ΔPIN.

7. Write the equation for the 3 lines that intersect to form the circumcenter of ΔZAP: Z(–2, –6), A(2, 10), P(4, 2) * Graphically show that these lines meet at the point of concurrency. Label it point U. * Give the coordinates of the circumcenter. * Use a compass to draw the circumscribed circle of ΔZAP.	8. Find the coordinates of the circumcenter of ΔTRM: T(–2, 1), R(4, 3), M(–4, –1)
9. Find the coordinates of the circumcenter of right ΔMNO: M(–4, 0), N(0, 5), O(10, –3)	10. Find the coordinates of the circumcenter of ΔCDE: C(0, 6), D(0, –6), E(12, 0)
11. Find the coordinates of the circumcenter of ΔFGH: F(–6, 0), G(3, 6), H(0, 12)	
12. If a triangle is a right triangle, there is a shorter method to finding the circumcenter. What is it? Explain.	13. If a triangle is an isosceles triangle, then there is a different, perhaps shorter method to finding the circumcenter. Explain.