1)**Write an equation in point-slope form for the perpendicular bisector of the segment with endpoints *C*(6, –5) and *D*(10, 1).**

2) **Write an equation in point-slope form for the perpendicular bisector of the segment with endpoints *P*(5, 2) and *Q*(1, –4).**

**3) Find the circumcenter of** ∆***HJK* with vertices *H*(0, 0), *J*(10, 0), and *K*(0, 6).**

**4) Find the circumcenter of ∆*GOH* with vertices *G*(0, –9), *O*(0, 0), and *H*(8, 0) .**

**5) A city plans to build a firefighters’ monument in the park between three streets. Draw a sketch to show where the city should place the monument so that it is the same distance from all three streets. Justify your sketch.**

**6) A sculptor is shaping a triangular piece of iron that will balance on the point of a cone. At what coordinates will the triangular region balance?**



**7) Find the orthocenter of ∆XYZ with vertices *X*(3, –2), *Y*(3, 6), and *Z*(7,1)**

**8) ∆*MNP* with vertices *M* (–4, –2), *N* (6, –2) , and *P* (–2, 10). Find the coordinates of the centroid and the orthocenter.**