

Let  $s$  be the length of each side of the square  $ABCD$ . Place the square in  $\mathbb{R}^2$  as follows:  $A(0, s)$ ,  $B(0, 0)$ ,  $C(s, 0)$ , and  $D(s, s)$ . With the pole at the point  $(x, y)$  such that  $AP = 17$  ft,  $BP = 24$  ft, and  $CP = 25$  ft. we can construct a circle of radius 17 ft centered at  $A$ , a circle of radius 24 ft centered at  $B$ , and a circle of radius 25 ft centered at  $C$ , such that all three circles intersect at point  $P$ . The equations of these three circles are:

$$x^2 + (y - s)^2 = 17^2 \quad (1)$$

$$x^2 + y^2 = 24^2 \quad (2)$$

$$(x - s)^2 + y^2 = 25^2 \quad (3)$$

By substituting (2) into (1) and (3), we find

$$x = \frac{s^2 - 49}{2s} \text{ and } y = \frac{s^2 + 287}{2s}$$

Substituting both into equation (2) gives us  $s^4 - 914s^2 + 42385 = 0$ . By quadratic formula  $s^2 = 49$  or  $s^2 = 865$ . If  $s^2 = 49$ , we have  $P = (0, 24)$ , the pole is outside the square. If  $s^2 = 865$ , we have  $P = (\frac{408}{\sqrt{865}}, \frac{576}{\sqrt{865}}) \approx (13.87, 19.58)$ . The pole is inside the square. Therefore the pole can either be inside or outside the square.